THE CULTIVATOR:

A MONTHLY PUBLICATION, DEVOTED TO AGRICULTURE.

I KNOW OF NO PURSUIT IN WHICH MORE REAL AND IMPORTANT SERVICES CAN BE RENDERED TO ANY COUNTRY, THAN BY IMPROVING ITS AGRICULTURE.—*Wash.*

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☞ The published volumes are for sale at the subscription price, or, if bound, the cost of binding added. The bound volumes may be also had of our Agents in the principal cities.

THE CULTIVATOR.

TO IMPROVE THE SOIL AND THE MIND.

☞ To our Patrons. ☜

In order that our next volume may begin with the commencement of the year 1840, the time when most of the periodicals commence their volumes, we propose to finish volume VI. in the current year, by publishing a number on the 15th of August, and another on the 15th of October, in addition to the usual monthly publications —if serious objections are not raised to this arrangement by our patrons.

☞ Failures by Mail.

☞ We are in the receipt of notices, almost daily, of moneys being sent to us by mail, which have never come to our hands. The amount thus lost is too great to suffer without repining; nevertheless, as we have assumed the risk of this mode of transmitting moneys to us, we must suffer the loss, *where satisfactory proof is rendered, that the moneys so presumed to be lost, were actually mailed*—a condition which we are obliged to insist on.

☞ We would suggest to publishers and others, that that notify the General Post-office of all failures in the receipt of moneys by mail, with dates, &c. in order to facilitate the detection of the rogues who violate their duty.

Horticultural Society of the Valley of the Hudson.

☞ In another column will be found a notice for a semi-annual exhibition of this society, to be made at the City-Hall in Albany, on the 25th of June instant.

The object of this association is stated in the notice. Should the institution be sustained, as we think it ought to be, by the liberal and enlightened inhabitants of our valley, it cannot fail of becoming highly serviceable in introducing among us all the more valuable varieties of fruits and ornamental plants, in diffusing a taste for rural embellishment, and in multiplying our domestic and social enjoyments. The descriptive catalogue of Pears, which we this day publish, will serve as an indication of the public service that may be rendered in the fruit department, by the labors of the association. We cultivate much fruit, but we cultivate but comparatively little which may be considered of the first quality.—Our garden productions are as susceptible of great improvement in their qualities as are our fruits. We unite our earnest invitation to that of the secretary, for contributions to the exhibition, and for the countenance and support of the friends of horticultural improvement. The exhibition will probably be kept open two days.

Aid to Agriculture.

We have refrained from noticing any of the proceedings of the legislature in regard to the encouragement of agriculture, from a conviction forced upon us by past experience, that nothing would be done to aid this great branch of industry.

Mr. C. E. Clarke, of Jefferson, chairman of the committee on agriculture in the assembly, introduced two bills into that house, one appropriating $25,000 annually for five years, to be awarded in premiums in the several counties, and to pay the *expenses* of a board of agriculture, and the salary of its secretary—and the other to encourage the growth of silk, by awarding bounties to those of our farmers who should raise it. These bills were each accompanied by a very able report, setting forth the many and manifest advantages which would result to the state from the passage of these bills into laws. Both bills passed the house of assembly, by respectable majorities, and were sent to the senate.—The silk bill was rejected in senate, and the one to improve the agriculture of this state, was virtually rejected there on the last day of the session, by an order to lay it on the table. The motion was made by Col. Young, who said "he could not in conscience suffer such a mischievous and dangerous bill as the agricultural bill to pass without fully discussing it."

We give the vote upon Col. Young's motion, in order that our readers may be enabled to censure or applaud, as they think meet, the conduct of their public servants.

Ayes.—Messrs. Beardsley, Clarke, Dickinson, Hull, Hunter, Huntington, Johnson, E. P. Livingston, Paige, Powers, Skinner, Spraker, Sterling, Van Dyck, Wager, Young—16.

Noes—Messrs. Fox, Furman, Hawkins, Jones, Lee, H. A. Livingston, Maynard, Moseley, Nicholas, Peck, Tallmadge, Verplanck, Works—13.

We confess that we are not familiar with the details of either bill, and therefore feel unqualified to speak distinctly of their merits; yet we are persuaded that something ought to have been done, and might have been done, had there been a disposition to do it. And we are wholly at a loss to conjecture what could have been the "mischievous and dangerous" principles in the bill, which so alarmed the sage senator and his compeers. We cannot but regret, that in a matter which most deeply concerns the interest of every class of community, party feeling should seem to have smothered the nobler impulse of public duty. Several of the gentlemen who voted against this bill, have professed to be friendly to its objects, and one of them reported, not long since, a bill of very similar import. If the details of the one now rejected were defective, they might have had it modified, or at least have made the attempt to do it.

It requires no great discrimination to perceive, that party spirit—the thirst for power and office, in the latitude in which it is now indulged—holds a paramount sway in our legislative halls, as well as in political meetings;—that it is the bane of whatever is generous, and disinterested, and patriotic, and great, and good;—that it infuses its poison not only into our legislative halls, but into the cup of our social enjoyments; and that its tendency is to impair the public morals, and loosen the bonds which unite us as a people. The question now, is not, what will best subserve the public good? but—what will best promote the interests of party?—and in the scramble for power, whatever measure is not likely to increase the political capital of a party, will pretty surely be opposed on party grounds—and whatever measure is advocated, or whatever individual is supported, by one political party, is as sure to be opposed and traduced by the other.*

Banks have, for a long time, been the locomotives of power, till the country has become far too full of them, and until they can no longer be made to exert a favorable political influence. Millions have been expended in canals, to subserve political ends, which are not likely to pay the interest on their cost for a long time to come, if ever. The eye of the politician is now directed to rail-roads, as the great avenues to public favor; and bills involving the responsibility of the state for many millions, have been in progress of passing into laws, for the construction of rail-roads, in the stock of some of which a prudent man would hardly make a permanent investment, at one-fifth of the par value of the stock. We are not opposed to canals or rail-roads, to a reasonable extent, where they promise manifest public usefulness, or any thing like ultimate remuneration for the outlay; but now-a-days they come in batches, as banks came formerly—the bad with the good—and by modern arts of legerdemain, they are so intimately joined and interwoven, that it is difficult to separate them; so that there is no alternative but to reject all, or adopt all.

We have been drawn from our purpose, which was merely to recommend to the friends of agricultural improvement, a steady perseverance in their praiseworthy efforts for the substantial improvement of their country —by the diffusion of useful knowledge, and in encouraging and honoring rural labor. In this way, the next generation which comes upon the stage, may be made to appreciate the value of our agriculture, and the policy and the duty of encouraging its improvement.

* "Our institutions do not cultivate us," says the Rev. Dr. Channing, "as they might and should; and the chief cause of the failure is plain. It is the strength of party spirit; and so blighting is its influence, so fatal to self-culture, that I feel myself bound to warn every man against it, who has any desire of improvement. I do not tell you it will destroy your country. It wages a worse war against yourselves. Truth, justice, candor, fair dealing, sound judgment, self-control, and kind affections, are its natural and perpetual prey."—*On Self-Culture.*

In what condition should Manure be applied?

While one set of men, embracing both practical and theoretical, contend that manures should be buried by the plough, at the bottom of the furrow, another set as pertinaciously insist that they should be covered only superficially with the harrow—the first contending that the fertilizing matters which they afford, *rise to the surface*, and the other, that they *sink* below the cultivated stratum. We copy to-day two articles from the Yankee Farmer, maintaining the opposite doctrines. A material distinction seems to have escaped the notice of both the writers, and that is—the *condition of the manure to be applied*—whether fermented or unfermented.

There is no fact better established, we believe, by chemical experiment, than that stable manure loses one-half of its fertilizing properties, by fermenting in mass, in a situation exposed to the influence of the sun and winds. A partial decomposition takes place, and the gaseous and most soluble parts are either scattered by the winds, or carried off by the rains. It is an equally well established fact, that if the fermentation takes place in the soil, these gaseous and soluble portions of the manure are retained there, are imbibed by the spongioles, or mouths, of the young crop, and that they contribute essentially to its growth and product. Now if long manure is spread upon the surface, these gaseous matters are lost, for they are specifically lighter than atmospheric air, as any one may see by observing the steam which rises from a fermenting dung heap. If long dung is only superficially covered with a harrow, it will but partially decompose, for lack of moisture, an indispensable agent in the process of fermentation. If, on the other hand, the manure is buried with the plough, it not only benefits by its gaseous matters, but it generates heat and benefits mechanically, by rendering the soil more open, and permeable to heat, air and moisture; it facilitates the decomposition of vegetable food, accelerates growth, and increases the product. And fermentation having exhausted its powers during the first season, in the culture of the hoed crop—for to such alone do we advise that long manure should be applied,—the plough turns to the surface, the coming spring, the carbonaceous parts of the manure which remain, where they operate most beneficially upon the coming crop.

The only plausible objection to burying long manure with the plough, in preference to mixing it with the surface by the harrow, is that adduced by Prof. Jackson, that the rains carry down its fertilizing matters into the subsoil—into wells and springs, beyond the reach of the roots of plants. With the highest deference for the Professor's opinion, we must be permitted to doubt the correctness of his conclusions in this matter. If the soluble salts were carried into the subsoil, as he supposes, this subsoil would be rendered fertile by them when it is turned to the surface, a proof that seldom occurs, until the subsoil is rendered fertile by long exposure to atmospheric influence. Nor do we admit that springs and wells are prejudiced by them, unless the water which holds them in solution, finds a direct passage into such springs or wells from the surface of the earth. We do know that impure water is purified by being filtered through charcoal and sand, and that pure springs burst forth from impure soils.

When we speak of fermented manures, or of such as are to undergo but a moderate fermentation, as rotten dung, bone dust, horn shavings, poudrette, &c. a different rule applies, and a different practice should be adopted. Those give off no gaseous fertilizing matters to the winds. Their only tendency is to sink in the soil.—Hence if they are blended by the harrow with the surface, they are calculated to act more efficiently than if buried deep by the plough.

Catalogue of Pears.

The varieties of the pear, until within a few years, have been few, and the quality, with some exceptions, indifferent or inferior. But through the active exertions of Dr. Van Mons, of the Netherlands, Mr. Knight, and other distinguished pomologists and horticulturists, the varieties have been greatly increased; and among the number now cultivated we have some of excellent quality, that are in eating during eleven months in the year.

The pear is used for the table, for stewing and baking in the kitchen, and for Perry. As most of the varieties now found in our nursery catalogues are new, and their quality, time of ripening, and the uses to which they are particularly adapted, but imperfectly known, even to nurserymen, great difficulty is experienced in making a judicious selection, that shall give a succession of fruit. We have frequently experienced this difficulty ourselves. To assist both the purchaser and the seller, and to disseminate a knowledge of the best varieties, we publish the catalogue below.

The London Horticultural Society published, in 1831, a list of 677 varieties of the pear, which were then growing in their garden. Of these, 278 kinds only had then fruited. These are described in a tabular form,

and divided into three classes as to size and form—their time of ripening, their use, their color, and form and texture noted, and remarks subjoined as to the character of the tree, &c. From this catalogue our list is principally taken. And it is proper to remark, that the kinds that have proved to be the best, on comparison, in the Horticultural Garden near London, have not in all cases proved to be of a like character in America—some of No. 1 in quality being here No. 2, and some of No. 2, being No. 1 with us. Our list embraces all of No. 1 in the catalogue of the Horticultural Society, which had fruited there in 1831, and such of No. 2 as are known to be in our nurseries, but none of No. 3. There are some American varieties not named here, because we cannot speak with certainty of their quality, time of ripening, &c.

We have endeavored to procure all the most esteemed varieties of the pear; and have succeeded in introducing into the Albany Nursery, from the London Horticultural Society's Garden, and from the best nurserymen about London, all the esteemed varieties, embracing several not included in this list, of high repute, which have come into bearing since the catalogue was published. Such as we have for sale, are marked by an asterisk. (*)

To aid the purchaser, who may be desirous of obtaining a succession of choice pears, we have classed them according to their time of ripening, into seven classes, those of the largest size, and of the first quality, being indicated by figure 1, and those particularly adapted for stewing and baking forming the seventh class. The synonymes are very numerous. We give, in *italics*, those only which are best known. By selecting one or more from each class, the purchaser will be sure of having a succession of this fine fruit ten or eleven months in the twelve.

NAMES AND SYNONYMES.	Size.	Quality.
Class I.—Summer Pears, *Ripening in July and August.*		
1. *Bergamot, early,	2	2
2. *Bergamot, orange,	3	2
3. *Bon Chretien, Williams's, *Bartlet*,	1	2
4. Caillot Rosat,	1	1
5. *Citron des Carmes, *Madeleine*,	2	1
6. *Green Chissell, *Sugar*,	3	2
7. *Jargonelle, *Epargne*,	1	1
8. *Lammas,	2	1
9. *Muscat Robart,	3	1
10. Passans de Portugal,	2	1
11. *Summer Rose, *Epine Rose*, &c.	1	1
12. Vallée Franche,	2	1
Class II.—Early Autumn Pears, *Beginning to ripen in September.*		
13. *Ambrosia, *early Beurre*,	2	1
14. D'Amour, *Jh Mon Dieu*,	3	2
15. *Belle et Bonne,	1	1
16. Beurre d'Amalis,	1	1
17. *Bon Chretien, summer,	1	2
18. *Buffums,	2	1
19. *Doyenne, white, *Vergaleu, St. Michaels*,	2	1
20. Famenga,	2	1
21. *Flemish Beauty,	1	1
22. *Franc Real, summer,	2	1
23. *Green pear of Yair, *Green Yair*,	2	2
24. *Henri Quatre,	2	1
25. *Hessel,	2	1
26. *Longueville,	2	1
27. *Neill, *Calmar Neill*,	1	2
28. *Rousselet de Rheims, *Spice*,	3	1
29. *St. Ghislan,	2	1
30. *Swan's Egg,	2	1
31. Wilbeck	1	1
Class III.—Late Autumn Pears, *Ripening in October.*		
32. *Alexander de Russie,	2	1
33. *Aston Town,	2	1
34. *Belle Lucrative,	2	2
35. *Bergamot, autumn,	3	1
36. *Bergamot, Gansell's,	2	1
37. Bergamot Suisse,	2	1
38. *Beurre, Brown, *B. Roi*, &c.	1	1
39. *Beurre de Capiaumont, *Capiaumont*,	2	1
40. Beurre Crapaud,	2	1
41. *Beurre Bosc,	1	1
42. *Beurre Deil,	1	1
43. Beurre Duval,	2	1
44. *Beurre Knox,	1	2
45. *Bezi de la Motte,	2	1
46. *Bishop's Thumb, *Rousseline*,	1	1
47. *Bon Chretien Fondante,	1	1
48. *Calebasse,	2	2
49. *Colmar, autumn,	1	2
50. *Colmar Neil,	1	2
51. *Comte de Lamy,	1	1
52. *Crassanne,	2	1
53. *Doyenne Grey, *Doyenne gris*,	2	1
54. *Duchess d'Angouleme,	1	1
55. Forme de Delicies,	2	1
56. *Franchipane,	2	2
57. *Gendesseim,	1	1
58. Grande Bretagne doré,	2	1
59. *Incomparable, Hacon's,	1	1
60. *Louise Bonne,	1	1
61. *Marie Louise,	1	1
62. *Moorfowl Egg,	2	2
63. *Parmentier, *Fortunée*,	2	1
64. Pittfour,	2	1
65. *Seckle,	3	1
66. Sieulle,	2	1
67. *Styrian,	1	2
68. Sucre vert, *Green Sugar*,	2	1
69. Superb Fondante,	2	1
70. *Swan's Egg, new,	2	2
71. *Urbaniste,	2	1
72 Warmsley Grange,	2	1
Class IV.—Early Winter, *Ripening in November.*		
73. Beurre d'Argenson,	1	1
74. Beurre, Beauchamp's,	2	1
75. Beurre Duval,	2	1
76. Beurre Van Mons,	2	1
77. Burgermeester,	2	1
78. *Chaumontelle, winter Beurre, .. to March,	1	1
79. *Colmar, ... to Feb.	2	1
80. *Crassanne, ... to Dec.	1	1
81. Delicies d'Hardenpont,	2	1
82. Duchess de Mars,	2	1
83. *Epine d'hiver, *Winter Thorn*, ... Jan.	2	2
84. *Echasserie, ... Feb.	2	1
85. *Fondante Van Mons,	2	1
86. *Forello, *trout pear*, ... to Jan.	2	1
87. *Glout Morceau, ... to Jan.	1	1
88. *Merveille d'hiver, ... Dec.	3	2
89. *Napoleon, ... Dec.	1	1
90. *Ne Plus Meuris, ... March,	2	1
91. Passatutte, ... Dec.	2	1
92. *St. Germain, ... Jan.	1	1
93. *Thompson's,	2	1
94. *Virgoulese, ... Jan.	1	1
95. Whitfield,	2	1
Class V.—Winter Eating Pears, *Ripening in December.*		
96. *Nelis, *Bonne de Malines*, ... Jan.	2	1
97. *Passe Colmar, *Colmar Epineux*, ... Jan.	1	1
98. *Beurre d'Aremburgh, ... Jan.	2	1
99. *Bezi Vaet, ... Jan.	2	1
Class VI.—Spring Eating Pears, *Ripening in January, and lasting till*		
100. *Beurre Easter, *B. de la Pentecote*, .. March,	1	1
101. *Beurre Rance, ... March to May,	1	1
102. *Crassanne, winter,	1	1
103. Downton, ... Feb.	2	1
104. *German Muscat, ... May,	1	1
105. *Garnon's,	1	1
106. *Monarch, Knight's,	2	1
107. *Rouse Lench, ... Feb.	1	1
108. *Van Mons, late, ... Jan.	2	2
Class VII.—Stewing and Baking Pears.		
109. *Bezi d'Heri, ... Oct. to Dec.	2	1
110. *Bellissimi d'hiver, ... Oct. to April,	1	1
111. *Belmont, ... Oct.	1	1
112. *Bequesne Musque, ... Nov. to Jan.	2	1
113. Bon Chretien Spanish, ... Oct. to Dec.	1	1
114. *Bon Chretien Ture, ... Oct. to March,	1	2
115. *Gilogil, ... Oct. to Feb.	1	2
116. *Bon Chretien, winter, ... Dec. to March,	1	2
117. *Catillac, *Bell*, ... Dec. to April,	1	1
118. *Chaptal, ... Dec. to April,	1	1
119. *Bergamot, Easter, ... March to April,	2	2
120. *Saint Germain, winter, ... Jan. to April,	1	1

Multiplication of the Multicaulis.

From the partial observation we have been able to make at the south, we are induced to believe, that the stock of the Morus Multicaulis, in the Atlantic states, will be increased to the extent of fifty millions of plants in 1839. We were informed at Burlington, N. J. that a million of young plants would be grown this season, within a mile and a half of that city. We were informed by two growers in Philadelphia, that they would raise, each of them, 200,000 plants. Indeed the propagation of this plant seems to engross the attention of great numbers of almost every class of the inhabitants south of lat. 42°. The importations from France, from the West-Indies, and from Florida, have been immense; and so late as the 10th May, they commanded from forty to seventy cents, by the hundred, at auction, in the New-York market. At the present rate of increase, one thing seems to be certain, that the public attention must soon be directed less to the *buds*, and more to the *leaves*—less to speculation in trees, and more to their use in the manufacture of silk—or that we shall ere long fail to realize all our golden dreams. The art of propagating has been so improved, as to render the ratio of increase astonishing. A single bud, or a piece of root, is placed in a green house, or in a hot-bed, or under glass, in January. It soon sends forth a shoot, and as soon as this is three or four inches long, it is cut off near the surface, the plant springs up afresh, the cutting is inserted in a pot of earth, where it grows. In a short time, under a warm temperature, which may be easily maintained, the parent and the cutting will each furnish the germ of a new plant. This process of multiplying may be kept up till June or July, and thus a single bud will become the parent of many plants, in a few weeks, and these plants will yield thirty or forty buds in autumn, attain a height of two to five feet, and be of marketable size. If each bud in this way makes three plants, and each plant grows forty buds, the increase will be one hundred and twenty fold. Thus, if prices keep up, the purchaser and propagator of one thousand buds, at three cents each, may clear by this small operation, upon the basis of the above calculation, the pretty sum of $3,300—a profit that has been more than realized in some cases.

We give the preceding estimate of profits, not to induce our readers *now* to embark largely in the business—for prices must unavoidably come down—but to show the exciting causes of the prevailing multicaulis fever, and the source of the enormous profits which the business has hitherto afforded.

The result of the multicaulis speculation will probably be—that many will make fortunes—that the tree will be extensively multiplied, and widely disseminated—and although some will be "*saddle-backed*," the country at large will be manifestly benefitted, and the silk business established as a productive branch of national industry, on a basis which nothing human is likely to overthrow.

In making these remarks, we do not intend to acknowledge any superiority in the multicaulis, over other species and varieties of the mulberry, for silk, and especially for northern culture. We have had but little personal experience in the silk business; and although our notions may be erroneous, we do not think the multicaulis is the best mulberry for silk, in our latitude, even though it were as hardy as other varieties, which it is not; for it has been entirely killed with us, while other varieties have stood unscathed by the winter's cold. The multicaulis seems about as tender as the sweet water or chasselas grape, which requires a protection of earth to preserve it during winter. Those, therefore, who mean to cultivate it, among us, for the leaves, are again cautioned to take up the young plants in autumn, and to cut down and cover the stumps of the larger ones. They may survive a mild winter, but they will almost assuredly be seriously injured or destroyed in a severe one.

The Rohan Potato,

Has become, next to the multicaulis, a prominent article of speculation, among the cultivators of the soil. We verily think it a valuable acquisition to American husbandry. But when we sold off our crop in October, at $2 and $3 the bushel, we had not a suspicion that the article would reach the price at which it has since been sold. The price has risen to twenty dollars a bushel, and the retailer, who has bought at this price, has realized a handsome nett profit by the purchase.

The Rohan is capable of yielding almost as rapid an increase as the multicaulis, and has certainly other high qualities to recommend it. And we have this further consideration to console us, that without the high prices which both the Multicaulis and the Rohan have borne, they would never have attracted so great a share of public attention, or have been so widely disseminated. At a low price, few would have regarded them as worthy of notice; as a gift they would have been thanklessly received, and little cared for; but as expensive articles, and of real intrinsic value, they are eagerly sought for, and carefully cultivated.—The spirit of agricultural improvement, which is abroad, will be annually adding to our valuable products; and it will happen as it has already happened, that those who are most forward to profit by the information and improvements of the day, will reap the best reward. And no man can expect to profit by this information and these improvements, except he is a subscriber, and an attentive reader, of some agricultural periodical, which registers and promulgates these improvements. Upon a limited estimate, there are ten millions of men, in Europe and America, who are devoting their time to enlighten the labors of the farmer, by which we mean, to render those labors more profitable. Whatever is most interesting and important, is communicated to the local agricultural journals, and by the interchange of these which takes place, the several editors are enabled to transfer to their columns whatever is likely to benefit their particular readers. Thus we are advised, immediately upon their introduction either in Europe or America, of every new species of plant, breed of farm stock, implement of husbandry, or mode of agricultural practice, which is likely to prove serviceable to our readers; and if we have discrimination and practical knowledge enough to separate the wheat from the chaff, the former is distributed monthly or oftener to our customers; and if they are wise and spirited, they appropriate it to their personal use, and get their twenty and fifty fold recompense.

Thus the readers of agricultural journals are enabled to apply to their personal use, the discoveries and improvements which are daily making in their business; while the farmer who reads nothing, who is content to be guided by instinct, or what is but little better, the light of his individual experience, derives little or no advantage from the discoveries of science, or the march of improvement, which so eminently distinguish the age, and which are daily abridging the fatigues, and increasing the profits of labor, in every department of productive industry.

The March number of the Farmers' Magazine, contains the first notice we have seen in the British agricultural periodicals of the culture of this root in England. G. Kimberly states, that in 1836, he obtained, through a friend at Paris, sixty moderately sized tubers; from which, although planted under trees, and suffering much from drought, he obtained, in 1837, 24 bushels full measure—the vines growing eight feet. These he planted last year, and obtained a most extraordinary yield. This potato is frequently exhibited in the Paris market, of ten pounds weight. They are cut in slices of about two inches thick, boiled well, and are pronounced to be very farinacious, or mealy, and of fine flavor.

The Value of Turnips.

"The introduction and cultivation of green crops," says the London Farmers' Magazine, "constitutes an era in the history of agriculture, not less important, or less valuable, than any of the splendid discoveries which have added so much to the value of other arts, and though some real, or rather supposed causes, have retarded a more extensive and easily practicable cultivation, the progress hitherto made, has doubled our agricultural produce, has afforded a better and more regular supply of food, and has added to the general comforts of every class of society. An extended cultivation of green crops, (roots and clover,) joined with our more modern discoveries, would nearly again double our agricultural produce; and the day is fast approaching, when all restrictions and fetters imposed by ignorance, prejudice and power, must snap before the march of intellect, and our common wants, and allow the cultivation of this art to proceed with other arts, and to take advantage of every known means of improvement, to supply the primary and indispensable requisites of life. Self-interest and individual gratification must ultimately give way to the general good."

Here is an opinion expressed, after a half century's experience, on a broad scale, that green crops, consisting principally of turnips and clover, have doubled the agricultural products of Great Britain; and that an extended cultivation of these crops might be made again to double her products. The turnip culture had all the insect enemies to combat, and all the prejudices to overcome, in Great Britain, which it has now to encounter among us; yet it has triumphed, and the land has been enriched, and the farmers prospered. It is not so much the immediate profit of the crop, as the tendency to improve the fertility of the farm, that gives to green crops their intrinsic merit. They afford a profitable means of increasing the fertility of the soil, which no other class of crops can furnish.

It is true, that in England, the main turnip crop is fed off by stock, or drawn and fed in an adjoining field, the economy of which practice is, however, questioned by many intelligent English farmers. Francis Blaikie, in the Farmers' Magazine, states his practice to be, to draw his Swedes in November, top them and cart them to an orchard, or other old turf, where they are *placed*, as he expresses it—that is, the bulbs are placed so close as to touch each other, tops up, and one tier deep. In severe weather, a slight covering of litter, here it might be earth, is thrown upon them. In such situations, says Mr. Blaikie, we have had them keep good till midsummer—if under a shade, the better. They strike fresh fibres into the ground; they are not liable to rot, nor will they become too dry for use. This hint deserves notice from our farmers. Although kept in pits in winter, they might be thus advantageously placed in early spring, and thus preserved for late feeding—the Swede enduring a considerable degree of frost without injury.

In a subsequent communication, Mr. Blaikie states, that he had preserved several acres of turnips in the manner above described; that they remained the whole winter without any covering, except by occasional falls of snow; that they were very little injured by the weather, while two-thirds of the remainder of the same crop, left in the fields, perished and became rotten; and that at the date of his writing, April 6, he had quantities remaining in fine condition.

Anglo-Merino Sheep.

This is the name given to a new breed of sheep in England, produced by a cross between the Merino and English long-woolled sheep, which has been brought to a state of excellence by Lord Western. Fine samples of this cross attracted admiration at the last Smithfield cattle show, and have been since the subject of frequent comment in the British agricultural periodicals. In the March number of the (London) Farmers' Magazine, we find a letter from Lord Western, accompanied by documentary proof, setting forth the high value of this new breed, as regards both carcass and fleece. The object of his lordship was to implant the Merino wool on the Leicester carcass; and although he admits that his sheep may not fat so early, or come to the size of the improved South-Down, still less to the weight of the Leicester, yet they give a handsome carcass, and carry a heavy fleece of equal to Merino wool; and are, withal, an improvement in hardiness, upon the pure Merinos. The carcasses of some of his shearling wethers weighed 150 lbs. 20 to 25 lbs. of which was gut fat; and his two shears weighed a little more. The wool of the cross-breed averaged over 5½ lbs. in a flock of 201 sheep.

Mildew on Grapes.

A. J. Downing, a good authority, states, in the Horticultural Magazine, that foreign grapes, as the Sweetwater, Chasselas, &c. may be preserved from mildew, by securing an annual succession of new plants, which is effected with very little trouble, by layering a thrifty shoot of the old vine in June, of some five to eight feet in length, which takes root, and produces fruit for one or two seasons, not subject to mildew. The layer is separated the next season, and the old plant dug up and thrown away. It is a common remark, that the foreign grape will be free from mildew one or two seasons after it comes into bearing, but that it is afterwards subject to mildew. The cause has not been satisfactorily explained. The finest vine of a foreign grape which we ever saw, grew in the garden of the late Judge Scott, of Catskill. We saw it in several successive years, when the fruit was at maturity, and it had no appearance of mildew. This exemption from mildew, the Judge ascribed to the circumstance of his having placed a large flat stone in the bottom of the hole before planting his vine—and which prevented the roots from penetrating the subsoil, the conjectural cause of the mildew.

Silk Manuals and Silk Periodicals.

There has been recently published, or republished, Silk Manuals, by Cobb, Kenrick and Whitmarsh, of Massachusetts, by Dennis of Rhode-Island, and by Roberts of Maryland. Of these we have seen Whitmarsh's, of which we have spoken, and Dennis's. Roberts has been complimented, in a substantial manner, by the legislature of Pennsylvania, who have resolved to purchase fifteen hundred copies of the author, E. R. Roberts, editor of the Farmer and Gardener, for distribution among the inhabitants of that State. Every silk grower should possess one of these manuals.

There are also now published, in the Atlantic states, the following periodicals, devoted almost wholly to the silk business, besides several, we believe, in the western states, which will also be found highly useful in the management of the mulberry and the silk-worm, viz. *Journal of the American Silk Society and Rural Economist*, published at Baltimore, Md. at $2 per annum—address G. B. Smith; the *Silk Culturist*, published at Weathersfield, Ct. by Judge Comstock; the American *Silk Grower*, published at Philadelphia, by Ward Cheeney & Brothers, the *Southern Silk Grower*, published at Baltimore, by E. Y. Reese; and another is published at Keene, N. H. the title and publisher of which are unknown to us.

Mr. Dennis's Silk Manual contains more than a hundred pages in small type. From the cursory perusal which we have given it, we are of opinion that it will serve as an excellent guide to beginners, and that it contains much valuable matter, in relation to rearing the mulberry, the management of the worms, and the manufacture of silk, which may be useful to those who may claim to be proficients in the business. We subjoin Mr. Dennis's

"TWENTY-TWO REASONS

"*Why the Farmers of the United States should raise Mulberry Trees and Silk.*

"1. Because it is a very certain crop.

"2. Because silk is as easy raised as wheat, and much less laborious.

"3. Because raw silk, or cocoons, will command cash in the market, and at a handsome profit to the producer

"4. Because a pound of silk can be raised to a much greater profit than a pound of wool.

"5. Because three pounds of silk can be produced from the same land that would produce one pound of wool.

"6. Because one pound of raw silk will sell for six dollars, and one pound of wool for fifty cents.

"7. Because the labor of raising silk is performed in six weeks, while the labor of taking care of sheep, and providing them with food, lasts all the year.

"8. Because the labor may be performed by children, or feeble persons, whose services would be worth very little for any other purpose.

"9. Because there can be considerable quantities raised, without materially diminishing the other products of the farm.

"10. Because the climate and soil are as well, if not better, adapted to the growth of the mulberry and the production of silk, than any part of Europe.

"11. Because there is no probability, and scarcely a possibility, of the business being overdone.

"12. Because mulberry trees are easier raised than almost any other tree.

"13. Because the timber of the mulberry tree is worth as much as locust, for building ships, fences, or any other purpose.

"14. Because large mulberry trees injure the crops growing under them, less than almost any other tree.

"15. Because mulberry leaves, when green, are greedily eaten by cattle, hogs, and sheep; when cured like grass to make hay, are an excellent food for cattle and sheep.

"16. Because land cultivated with mulberry trees, and the litter from the worms spread upon it, would be impoverished less than if cultivated with almost any other crop.

"17. Because it will cost no more to transport a pound of silk to market, that will sell for six dollars, than it would to transport a pound of bread stuff, that would sell for six cents.

"18. Because the small sum of five dollars, or even one, expended in purchasing mulberry seeds and cuttings, with a little care in cultivation for a few years, will enable a farmer to produce considerable quantities of silk.

"19. Because the eggs can be kept in an ice house until the middle or last of the seventh month, (July,) and then the worms can be hatched and fed after the busy season of mowing or harvest is over.

"20. Because the man, with a little land, who has a family, can increase his mulberry trees and keep his family employed at home, without the risk of sending them abroad for employment, where they would be liable to have their morals corrupted.

"21. Because it would relieve the nation from paying millions of dollars annually, to other nations for silk.

"22. Because there are twenty or twenty-five silk manufactories already established, several of which have been stopped, waiting for the importations of raw silk."

Agricultural Periodicals.

Have been multiplied among us till their number exceeds thirty in the United States, and even the family of "Cultivators" has increased to six or seven—in 1819, there was but one—and the correspondents to these journals have become so numerous, that it is impossible for any one editor to copy from others all, or but a small portion, of what he may find in them, interesting and profitable to his readers. Original communications, possessing ordinary merit, are ever entitled to precedence; and every editor feels himself under obligation to labor somewhat personally in his vocation. We have ourselves felt embarrassed for want of room to insert articles of merit which have originated in other agricultural journals; but have been obliged, from the number of our correspondents, with whom we are desirous of maintaining a good understanding, to forego this satisfaction. The truth is, that although every agricultural journal may contain *many* good things, no one of them is capable of publishing *all* the good things which are issued from the agricultural press, and which are calculated to improve the soil and the mind.

Under this situation of things, we submit to the consideration of the independent farmer, whether he will not find it to his interest, and that of his sons, to extend his patronage to more than one of these journals—whether ten dollars, the price of a daily political journal, might not be profitably expended in this way, in the subscription to half a dozen agricultural journals.

The editors of the Farmers' Cabinet, Philadelphia, appreciating these facts, and to meet the requests of their friends, have offered to become local agents for all agricultural works. We meet their offer in a spirit of liberal feeling, and tender a reciprocity of favors. Subscriptions for the Farmers' Cabinet, or any other agricultural periodical, will be received at the office of the Cultivator.

Horticultural Publications.

ROBERT BUIST, of Philadelphia, one of our best practical gardeners, has just published *The American Flower Garden Directory*, containing ample directions for the selection of flowers, and for their management in the garden, green house, parlor, &c.—400 pages.

E. SAYRES, formerly of this city, has published at Boston, *The American Fruit Garden Companion*, being a treatise on the propagation and culture of fruits in the middle and northern states—170 pages 12mo.

Although we have been presented with the latter of these works, we have not had time to give it that examination which will justify us in speaking of its merits.

The Season

Has hitherto been very auspicious, and so far the prospect of an abundant harvest is highly encouraging. Our correspondent at Emmettsburgh, Md. writes, "the wheat in this county bids fair to be considerably over an average crop." We have heard the prospects spoken of as flattering from most parts of the country, without any material drawback. The clover has suffered considerably from the want of its accustomed fleecy covering in winter. The weather in April was unusually warm, vegetation shot forth luxuriantly, and the season on the first of May was two weeks earlier than usual.

Since writing the above notice, we have made a tour as far south as Philadelphia. From personal observation, and from the information of travellers, we are fully confirmed in the opinion, that the harvest prospects of the winter grain crop are almost every where propitious.

The Tendency of Rail-Roads

Seems to be, to retard the growth of small cities, or at least to concentrate business more in the large ones, to which they greatly shorten distances. We lately took the rail-road through New-Jersey, in order to see the cities of Newark, New-Brunswick and Trenton, and the villages of Elizabethtown, Princeton, &c. but to our surprise, we did not pass through any of them, and some of them we had hardly a distant view of. Where rail-roads have been constructed, they now engross almost the entire travel; and the traveller seldom stops more than five or ten minutes, at any intermediate points, unless he has special business to detain him. In moving at the rate of one hundred miles in six hours, one has hardly an opportunity of seeing the country, much less of seeing, or doing business, in the towns and villages.

New-York Geological Report.

The Reports communicated to the Legislature at the recent session, of several of the gentlemen belonging to the geological corps, comprises about 350 pages, and contains many matters interesting to the farmer. We shall endeavor to select the most interesting of these for publication, particularly those which develop mineral and vegetable sources of fertility.

The first communication is from Messrs. Emmons and Hall, suggesting the propriety of a suitable building being prepared for the reception and arrangement of the specimens collected by the gentlemen engaged in the geological survey—a suggestion which highly merited, but which we believe did not receive, the efficient consideration of the legislature. These specimens will be of incalculable benefit in future time—they will constitute a museum of the natural productions of our state—animal, vegetable and mineral—of great interest to the naturalist, and of essential use to the farmer and mechanic. And when we consider that the number of minerals, fossils, &c. will probably exceed 4,000, the importance of the state providing a suitable place for their deposite and classification, must be apparent to all.—We pay some 120 to $150,000 for the geological survey; and the money will be well expended, if we profit, as we may, from the labors of the corps. We are afraid, however, that like the labors of agriculture, the valuable services of this corps, will be treated by our legislatures, as of minor importance, when put in competition with party politics and rail-roads. We shall be exceedingly happy to acknowledge ourselves mistaken in this opinion.

The second article in the governor's communication is the report of Dr. L. C. Beck, on the *Mineralogical and Chemical Department of the survey*. The report com

prises a general view of what has been done in this department. It commences with a tabular view of the minerals which have hitherto been found in the state, which is followed by concise remarks on each. We shall confine our notice to such as are more immediately interesting to the farmer.

ANTHRACITE AND COAL,

are found in various localities, but not in sufficient quantity for any useful purpose.

PEAT.

"Of this useful, but almost entirely neglected combustible," says Dr. Beck, "we have already discovered numerous important localities; and many others will undoubtedly be added before the completion of the survey. The time cannot be far distant, when the value of this article will be duly appreciated. In many countries it is extensively employed as fuel; and in several manufactures it might be used with great advantage, as, for example, in the burning of bricks, limestone, &c."

As a fertilizing material for the soil, peat offers an almost inexhaustible supply, or at least the muck in our swamps, which more or less partakes of the properties of peat. It is vegetable food; but generally in an insoluble state. To render it available as vegetable food, the admixture with it of gravel or sand sometimes suffices; at other times it is necessary, in order to render it soluble, to bring it in contact with recent manures, lime, or other fermenting or heating matters. At other times, paring and burning the surface is the best mode of improvement—the action of fire, and the salts which the ashes yield, effecting a chemical change in its quality. Sometimes thorough draining of swamps induces great fertility. In all cases, we believe, it is profitably used as a bedding in cattle yards. It absorbs the liquids, is broken down and blended with dung by the tread of the cattle, and is thereby rendered completely soluble, and enriching to the soil.

CARBONATE OF LIME,

in most of its varieties, is found in many of the counties. The term marbles is confined to those varieties which are susceptible of a polish; and these frequently contain carbonate of magnesia, which, according to received opinions, renders them unfit for agricultural purposes, though they are mostly adapted to building purposes. Beds of marble are found in Westchester, Putnam, Dutchess, Columbia, Ulster, Albany, Schoharie, Oneida, Madison, Onondaga, Wayne, Niagara, Washington, Warren, Essex, Clinton, Franklin and St. Lawrence. In some of these localities the stone is white, in others grey, variegated, &c.

A great improvement, in the economy of burning lime, is mentioned in this report, which consists in the use of refuse screenings or dust of anthracite for fuel, instead of wood, and the employment of a perpetual kiln. It is stated on the authority of Dr. Jackson, that the lime burnt at Thomason, Maine, and "which serves to supply nearly all the cities on the Atlantic coast with the lime used in their buildings, and for agriculture," brings to that town alone half a million of dollars.

"Here, then," says the Report, "we have the singular fact, that fuel is transported from the city of New-York to Thomason, and the lime procured by its agency again transported to New-York. Now, the lime thus obtained must be greatly superior to that which is produced from our limestones, or else our citizens have been strangely neglectful of their interest in this respect. I have reason to believe that the counties of Westchester, Orange and Dutchess, contain limestones which would yield lime equal to any elsewhere manufactured. And with the improvements already introduced into our limekilns, as well as in those of Maine, one would suppose that our lime could be afforded at a much cheaper rate in the city of New-York, than that which is transported from a distant part of the United States. This subject commends itself to the enterprise of our fellow-citizens."

HYDRAULIC OR WATER LIME.

We have quoted the report on this subject, in another column.

GYPSUM, PLASTER OF PARIS, OR SULPHATE OF LIME.

"This important article, for which until within a few years past we were almost entirely indebted to Nova Scotia, may now be ranked among the great mineral products of our state.

"Gypsum, when pure, has a snow white colour, but it is often tinged with red, yellow, blue and grey, in consequence of the admixture of foreign substances. When crystallized, it is foliated, but it also occurs granular and compact. The foliated varieties are called *selenite*, while the compact ones are often known by the name of *alabaster*. It is distinguished from carbonate of lime by its being less hard, as it may be scratched by the finger nail; acids, when applied to the carbonate of lime, cause an effervescence, owing to the escape of carbonic acid—but no such effect is produced by a similar application to the sulphate of lime.

"The variety of sulphate of lime which is most abundant, is composed of sulphuric acid and lime, with about twenty per cent of water. Whenever it is used for architectural purposes, this water is driven off by the application of heat, the operation being commonly known by the name of *boiling*. The calcined or boiled plaster, when made into a paste with water, speedily hardens, and it is employed in this way for walls, for stucco, for taking casts of statues, in stereotyping, &c. Gypsum is moreover largely used in agriculture, and it is considered an invaluable fertilizer.

"Of this useful mineral, we have numerous and very important localities. They are, however, almost exclusively confined to the district bordering on the Erie canal. I am aware that it occurs in the counties of Columbia, Albany and Schoharie, but however interesting the specimens here procured may be for the cabinet of the mineralogist, the quantity is nowhere sufficient to answer any other purpose.

"The west end of the town of Starke, in Herkimer county, is the most eastern point at which gypsum has been found in any great quantity. According to Mr. Vanuxem, it occurs in white sandstone, the grey band of Mr. Eaton, and he represents it as being white and equal to the Nova Scotia both before and after calcination. From twenty to thirty tons had been obtained by Mr. Crill, the proprietor, during the summer of 1837.

"In Oneida county, gypsum is found in beds of vast extent. It is sometimes pure, being foliated and transparent; but the largest proportion is dark coloured, and is mixed with carbonate of lime, constituting what is usually called *plaster stone*. This last is used for agricultural purposes, and when deprived of its water by calcination, as a cement.

"Localities of this mineral abound in the county of Madison. It is sometimes foliated and granular, but usually as in the above county, it belongs to the common or impure variety. It occurs imbedded in gypseous marl, every where forming irregular or somewhat rounded or conical masses rarely more than forty or fifty feet in diameter, and usually from ten to twenty feet in height. These hillocks seem to be detached, and the conclusion is almost irresistible that they have been formed after the upper strata of rock have been deposited. The masses of gypsum are a foot or more in thickness, and weigh from four to six hundred tons. I can give no details concerning the amount of this mineral annually raised in this county, but in the town of Sullivan alone it is said to be from four to seven thousand tons.

"On the route from Chittenango to Syracuse, in Onondaga county, conical elevations similar to those already noticed, are of frequent occurrence; some of which have already been opened and found to contain deposites of gypsum, while others are left as the reward of future enterprise and labor.

"The interesting region around Onondaga lake, of which I have heretofore attempted to give an account, contains in addition to its other sources of wealth, some important deposites of gypsum. At Liverpool, the fibrous variety, then comparatively rare in this state, was found several years since, about twelve feet below the surface of the earth, associated with marly clay. Recently the excavations made for the construction of the rail-road from Syracure to the Split-Rock quarry, have opened an extensive bed of the same valuable mineral. At this locality are to be found several varieties; as the foliated, the fibrous, the snowy, and the common or dark coloured—the whole imbedded in a kind of gypseous marl which effervesces freely in acids, and contains variable proportions of the oxide of iron. Gypseous beds, similar in their general character, also occur in the vicinity of Manlius, from which large quantities have been exported. But probably the most valuable deposites that have yet been opened up are those along the line of the Syracuse and Auburn rail-road, near the village of Camillus. We find here, among other varieties, noble specimens of transparent selenite, and what renders the locality peculiarly interesting, are the associated strata of calcareous tufa, and of the singular hopper form crystals of marly clay. From forty to fifty thousand tons of gypsum have been obtained simply from the excavations which were necessary for the construction of this road. And this may be considered as merely a specimen of what is still hidden in the adjoining hills.

"Beds of gypsum occur in various parts of Monroe county. Specimens of the foliated variety, with a rose colour, have been found below the Genesee Falls, at Rochester, and nodules of snowy gypsum are quite common in the calciferous slate at the same place. Gypsum is also obtained in small quantities in the towns of Pittsford, Riga and Chili; but, according to Mr. Hall, the workable beds of this mineral are almost wholly confined to the southern part of the county.—'Along the valley of Allen's creek and Mill creek, two miles north, most of the plaster of Monroe county is obtained. Both these places are in the town of Wheatland. At present about 5,000 tons of plaster per annum are obtained from this town; of this quantity, 4,000 tons are used in Monroe Co.'—*Hall's Report for* 1838.

"In the counties of Cayuga, Wayne, Livingston, Ontario, Seneca and Tompkins, beds of gypsum have been found in various places; but I have no means of determining even the probable quantity which they yield.

"The localities of this mineral in Niagara county are of considerable interest to the mineralogist. At Lockport, beautiful specimens of transparent selenite and snowy gypsum have been found, associated with pearl spar, sulphate of strontian, and the rare anhydrite or anhydrous sulphate of lime. Snow white granular gypsum also occurs near the Falls of Niagara, with occasional specimens of foliated selenite of a fine sky-blue colour. At all these localities, the gypsum is imbedded in the geodiferous lime-rock of Professor Eaton, but it does not, to my knowledge, occur in quantities sufficient for useful purposes.

"A very imperfect idea of the quantity of gypsum which exists in this state, will be obtained from the sketch which has now been given. Even if we had the means of ascertaining exactly the number of tons at present annually raised, which I think cannot be less than 50,000, it should be borne in mind that regular explorations are seldom undertaken, and that the amount, whatever it may be, is mainly the result of accidental discovery, and of occasional labor by the farmer during the intervals of his other avocations. Immense beds still lie unopened, which will at some future day yield their treasures. Perhaps one reason why greater attention has not been paid to the enormous deposites of gypsum and marl which exist in the western part of the state is, that the soil is naturally so fertile as seldom to require the employment of those artificial means of renovation which in most other countries are necessary to the success of the agriculturist. Still it cannot be doubted that in many situations even here, much advantage would be derived from the use of these efficient fertilizers. Lime, marl and gypsum, all of which can be so easily and so abundantly obtained in the region in question, have almost entirely changed the agricultural character of the states of New-Jersey and Pennsylvania; but it appears to me that in no part of our state which I have visited, is the value of these articles duly appreciated."

"MATERIALS FOR THE MANUFACTURE OF PORCELAIN.

"The localities of clays suitable for the manufacture of brick and the common kinds of earthen ware, are too numerous in this state to be at present noticed, and their description belongs rather to the department of geology than to that of Mineralogy. Many of these have already been noticed in the reports of the geologists, and Prof. Mather has presented some details which show the importance of the branch of industry included under the art of brickmaking.

"The manufacture of the finer kinds of pottery has not heretofore been carried on with much success in our country. Whether this be owing to the superior facilities which are possessed by the English and French in regard to materials, or to the reduced price of labor, it is not easy to determine. My present object is merely to show that New-York is not destitute of the materials necessary for this branch of art.

"The finer kinds of pottery require for their manufacture the purest clays—such as contain little or no oxide of iron and which consequently do not turn red in burning. To these a portion of pure silica is added, which is prepared for the purpose by heating masses of flints or quarts, quenching them in water and then reducing them to powder in a mill.

"Clays of a good quality occur abundantly in various parts of Staten and Long-Island, and upon proper trial they would no doubt be found to answer the purposes of this manufacture. There are also several localities in Orange county, where similar materials may be obtained.

"Near Southfield furnace, in the latter county, is a bed of decomposed feldspar, known by the name of porcelain earth, which will probably be of great value in the manufacture of pottery. This substance is of a pure white colour when dry, a little unctuous, and is supposed to be abundant.

"As for feldspar, used in glazing and also in the body of the finer kinds of pottery, we have several localities in Orange county, in Warren county, near Caldwell, and also in the counties of Jefferson and St. Lawrence; while quartz, of a good quality and in sufficient abundance for the same purpose, is found in Orange, Columbia, and other counties.

"Those who are at all acquainted with the history of the arts, both in this and in other countries, must be aware that their progress has oftentimes been extremely slow, and it will not be surprising if the manufacture in question, although now of so little value to us, should become an extensive and important one. Previously to about the year 1760, England depended wholly upon other countries for the finer kinds of pottery; the English ware being generally of an inferior quality. But in a few years after the investigations and consequent improvements of Mr. Wedgewood, the current of importation of even the finer earthen wares was changed in that country to exportation, and their manufacture has at length become of such vast extent that it is not easy to calculate its value.

"So it has been with many of the arts now successfully prosecuted in our own country. A great number of articles, for which we were but a few years since entirely dependent on foreign nations, are now manufactured by our mechanics and in our own workshops."

THE BUDGET.

☞ A subscriber wishes Mr. Garnet's opinion of the best method of applying manures to land.

☞ Mr. Love's request will be made known to Mr. Pitts as soon as the latter arrives at Albany, which is daily expected.

ROOT SLICER.

We have received from our esteemed Lockport correspondent, J. E. a drawing and description of a root-cutter—the knife to cut both ways, fixed in a frame, which is to be moved by manual power, on a horizontal frame, backward and forward, under the hopper containing the roots. The objection to the machine would seem to be, that it possesses no economy or multiplication of power—but must be propelled by main force, without the aid of any of the mechanical powers, as the lever, wheel, &c. We have seen cutters which we deem preferable.

WILD GARLIC OR WILD ONIONS, &c.

A Staten-Island "Subscriber," asks directions for expelling wild onions, or wild garlic, from his fields, and of removing the taste of them from milk, &c. The wild garlic is a bulbous perennial plant, and is a troublesome pest in many districts of our country. It is as hardy as the Canada thistle, or quack grass, and as tenacious of life; and can only be destroyed, like the thistle and the quack, by preventing the growth and maturing of the top—which is effected by ploughing and hoeing during the spring and summer months—by spring crops. No plant can survive the growing season, without leaves, its elaborating organs.

We find in the Memoirs of the Philadelphia Ag. Society, several communications confirmatory of the above being an effectual mode of destroying the wild garlic.—We will cite the experiment made by Paul Busti. He ploughed his field early in the spring, which was infested with the wild garlic, and prepared it for Indian corn. Garlick came up, but was cut down and overturned by the hoe and plough, in dressing the crop. Few escaped unhurt. "Determined, however, that none should remain, and convinced by the simple reasonings of plain good sense, that the frequent stirring of the ground, [destruction of the leaves or tops,] must prove the best check upon the growth of any vegetable, I converted in the spring," says Mr. B. "the corn into a potato field, adding a good deal of manure. I may with truth boast, to have perfectly succeeded in subduing the garlic; for among the rye harvested this year from that spot, not a single seed of garlic was discoverable."

Algernon Roberts wholly destroyed the garlic in a field, by a succession, for some years, of spring crops, corn, oats and clover, accompanied by gypsum and manure.

To destroy wild garlic, says Cooper, a system of good farming must be adopted, founded on good manuring and fallow crops, (not fallows,) where the crop requires careful horse-hoeing.

Quack grass is destroyed by three or four years of close pasturing—because the cattle destroy the roots by keeping down the tops—but as cattle will eat the tops of neither the thistle nor star of Bethlehem, these can only be eradicated by tillage—by spring, by hoed crops.

To remove the taste of garlic or turnips in milk, it is directed, in the Domestic Encyclopedia, to pour into each gallon of milk, when it is fresh from the cow, one quart of boiling water. The flavor of the garlic and turnip being volatile, is set free and expelled by the heat of the water.

A Rev. Clergyman, who has recently located himself

upon a farm in Pennsylvania, has described to us a "*pest*," which abounds in some of his grounds, and which he asks directions for getting rid of. He denominates it "*evergreens*," and his farmer "*ripple-grass*." It grows in *bunches*, has *matted bulbous roots*, and spreads with great rapidity. He says he has seen this detestable weed cultivated in the east, in gardens, with great care. We suspect this "pest" to be the star of Bethlehem, (*ornithogalum umbellatum.*) Be it this or not, the only means of destroying it is that recommended for destroying the wild garlic, the Canada thistle, quack grass, or other perennial—by preventing, by means of the hoe and plough, the growth of the stem and leaves, the elaborating organs of the plant, and thereby starving the root, so that it will die.

POTATO OATS

Are highly commended by L. B. Nottingham, Eastville, Va. His neighbor, Dr. Kerr, from a shot bag full of seed, less than the twentieth part of a bushel, obtained, with ordinary management, three and a half bushels. Mr. Jaynes, another neighbor, raises them to weigh forty pounds per bushel, and sows this year three hundred bushels of seed.

DUTTON CORN AND ROHAN POTATOES.

A. M. D. Robertson, writes us from Rock River, Wisconsin Territory:—"Last spring, I procured one quart of Dutton corn, and three Rohan potatoes, from friend Thorburn, of Albany. I planted them in the Rock River soil. Both were planted late. The corn suffered much from the cut-worm and prairie squirrel; notwithstanding which the product was from sixty to seventy bushels the acre. Every grain is bespoken for seed. The three potatoes were planted in 18 hills.—They suffered much from the cut-worm. I dug them late in the fall, and had a barrel larger than a flour barrel full, and three pecks over. It is a hard tale, but it is truth, every word truth. I could hardly have believed it myself, if I had not seen it."

J. E. Ferre, of Agawam, Mass. raised from one tuber, weighing six ounces, 34 lbs. Rohans, being sixty-eight fold.

TIME TO SOW CLOVER.

"When is the best time to sow clover seed, on a piece of loam, to be sown to winter wheat in the latter part of 9th mo. (Sept.) after corn?—*E. Mabbett.*" *Answer*—In April, upon the young wheat.

A DECENT PIG.

Lyman Smith, of Westfield, Mass. slaughtered a pig in March, which weighed when dressed, 791 lbs.

RELATIVE VALUE OF POTATOES.

A Columbia correspondent is puzzled to reconcile the various statements we have published, at different times, as to the relative value of potatoes and Swedish turnips for cattle food. He says ruta baga is stated to contain from seven to eight per cent of nutritive matter, and potatoes twenty-five per cent; that in the sheep report of Mr. Rotch, 200 lbs. of potatoes are deemed equivalent to 350 lbs. of ruta baga for sheep; and that in the conductor's report in our March number, upon the comparative value of roots for neat cattle, we stated, that it would seem there is no great difference in the feeding properties of the three kinds, viz. potatoes, mangold wurzel and ruta baga, so far as measure and weight are concerned. In reply to our correspondent, we can only say, that each of the authorities he refers to, that is, Davy, Wagner, and the Prize Essays of the Highland Society, are all highly respectable, and entitled to credit. Davy states the soluble nutritive matters of 1000 parts

Of the potato, to be.....	200 to	260
" ruta bag,.....		64
" red beet,.....		148
" white beet,.....		136
" parsnip, ...		99
" carrot, ...		98
" linseed cake, ...		151

Now every person who has had experience in feeding the above kinds of food, will know that linseed cake is more than twice the value of potatoes for fattening beef, although its nutrient properties are rated twenty-five to fifty per cent less than those of the potato; that the carrot is better for cows, and particularly for horses, than any of the other roots, or than oil-cake, although it ranks in the scale below most of them; that to the pig, the potato in its raw state is less nutritious than the carrot, the parsnip, the beet, or the ruta baga—indeed, that while a pig will thrive on any of the former, he will but live upon the latter, although the potato outranks them all in nutrient properties, from twenty-five to one hundred per cent; and finally, that what may be meat to one species of farm stock, may be poison, or at least may fail to possess fattening properties, to another species. We do not assume to reconcile the seeming discrepancies which our correspondent has pointed out, and still we are disposed to respect them all as good authority. We believe that animals, like plants, have their specific food; and that what is most beneficial to one species is not equally beneficial to another species. One kind of animal, like one kind of plant, will assimilate and retain some portions of food, which another kind of animal will void. There is still one other consideration which we will offer, and that is, that the potato differs one-half in its nutritive or fattening properties, which ranges, in different varieties, from fourteen to twenty-eight per cent. There is much yet to be learned pertaining to the "art and *mystery*" of agriculture.

Having thus endeavored to answer the queries of our correspondent, we beg, that in his next communication he will send us his name, though he should tax us with postage.

QUERIES.

1. *Is June as good a season to bud peach trees as August?* No—August and September are the best months, and stocks should be budded the first season of their growth from the seed.

2. *Is not budding better than grafting for that fruit?* Budding is decidedly preferable to grafting on the peach.

3. *Does it make any difference whether those of the same species are united, or of different species, i. e. clingstones upon clingstones, or upon freestones?* None at all. The peach may also be worked on the plum, the apricot upon the peach, some pears, (the melting kinds generally,) upon the quince, &c.

"*Studioso Evangeliis,*" is too sensitive. The term *producing* classes is applied, by common consent, to those who virtually create wealth by manual labor; and the term *non-producing*, or consuming classes, is used, in contradistinction to the other, to indicate those who do not live by manual labor. We make not war with the learned professions. They are all useful to a limited extent; but in some departments we have certainly an excess, or an undue proportion of these good folks; and our desire is to bring about an equilibrium in the commonwealth—not by depreciating the one class, but by enlightening and elevating the other, and thereby increasing their numbers, and their moral and political influence upon society.

WATER LIME.

"*What is water lime, and how is it prepared?—J. Chaplain.*"

We give the answer to the inquiry of our correspondent, in the following extracts from the report of Dr. L. C. Beck, from the Geological Report, just published.

"*Hydraulic or Water Limestones.*—It is well-known," says the Report, "that the lime obtained by the calcination or burning of the different kinds of limestone, differs greatly in its properties. When the limestone is pure, the resulting lime is also of uniform purity. Upon the addition of water to such lime, a high degree of heat is produced, its bulk is greatly increased, and it at length falls to powder. This powder, when mixed with water, and a due proportion of sand, and afterwards exposed to the air, gradually acquires a stony hardness; but this result is not produced when the mixture is submitted to the action of water. Now these are designated by the name of *air limes*, and their relative value depends in some measure upon the kind of limestone, and the particular mode of calcination.

"But certain impure limestones, when subjected to calcination, afford limes which, while they do not undergo much change by simple exposure to the air, do not slake when moistened with water, but when reduced to powder, absorb this liquid without producing much increase in volume, and without the evolution of much heat; and they moreover form with it a paste possessing little tenacity, and which when placed under water, hardens after the lapse of a few days.—These are now known by the name of *hydraulic or water limes.* They differ much in the rapidity with which they harden under water, and in the degree of solidity which they ultimately attain.

"There are still other limestones which afford limes, possessing the remarkable and very useful property of becoming hard almost instantly, like plaster of Paris, whether exposed to the air or in contact with water. These are sometimes called *Roman Cements.* It should be remarked, however, that the French generally employ the term *ciment*, to designate fine pounded bricks or tiles; while in this country. the term *cement* is most commonly used in a generic sense, and includes the hydraulic constituent of mortars, whatever that may be.

"There is still some difference of opinion, as to which of the ingredients of these impure limestones, the hydraulic property is to be ascribed. Some of those who have examined the subject, have fixed upon the oxide of iron, as the important ingredient; while the claims of the oxide of manganese, silica, alumina, magnesia, and even soda, have each been urged by respectable authority. It is, after all, however, more than probable, that the hydraulic property is not due to a single ingredient, but belongs rather to several substances, or to a class of compounds.

"It appears, from the experiments of Berthier and Vicat, the highest authorities upon this subject;—that no mixture, of which silica does not form a part, acquires hydraulic properties;—that limes containing only silica or alumina, or better those containing silica and magnesia, acquire a much greater degree of hardness than the silicates of pure lime; and that the oxides of iron and manganese contribute nothing to the hardening of these bodies.

"More recently, M. Vicat has asserted, that magnesia alone, when in sufficient quantity, will render pure lime hydraulic. The proportions of magnesia which he recommends, are from thirty to forty per cent of it, weighed after calcination, to every forty of pure anhydrous lime. 'M. Vicat also points out the importance of these observations;—hydraulic lime never having been found in the calcareous formation below the lias, is because the dolomites have never been examined; but it is now probable that it may be found in this formation.'*"

"The mode of preparing the cement is sufficiently simple. The limestone is first reduced to small fragments, which are then thrown into a kiln, with layers of the screenings of anthracite intermixed. At an interval of of twelve hours, the lower layers of the kiln are removed, and fresh portions of the limestone thrown into the upper part. These operations are so managed, that each layer is subjected to heat for about three days.

"The lime thus calcined, is of a light drab colour, and when reduced to powder and mixed with about one-third its bulk of sand and made into paste with water, soon becomes hard. The grinding is performed in a mill, and the powdered cement is put up in barrels, which are lined with paper, to exclude as much as possible, the contact of air. The cement thus prepared, is sold at $2.25 the barrel."

* London & Edinburgh Philosophical Mag. 3d series, VIII. 591.

Water limestone is found in the counties of Albany, in the Helderbergh; of Herkimer, Oneida, Madison, in most of the western counties, and particularly in the county of Ulster, in which latter place, upon the Rondout, and Hudson and Delaware canal, 3,000 barrels of this cement are manufactured weekly, a great portion of which is employed in the Croton aqueduct, and in the United States' works, near Boston. Dr. Beck gives the following analyses of the Ulster county hydraulic lime, the first set of figures showing the proportions in its natural, and the second set in its calcined state.

Carbonic acid,.....	34.30	5.00
Lime, ...	25.50	37.60
Magnesia, ...	12.35	16.65
Silica, ...	15.38	22.75
Alumina, ...	9.13	13.40
Oxide of iron, ...	2.25	3.30
Bituminous matter, moisture and loss,.....	1.20	1.30
	100.00	100.00

Acknowledgements.

From the Hon. James M. Garnet, of Virginia, a drill-barrow, which sows four rows at a time—of which we shall speak further when we have tried it. From Mr. Fitzhugh, Indiana, seed corn, a cross of the Tuscarora and Sweet or Sugar varieties, which we have planted. From George C. Thorburn, New-York, a bushel of the celebrated Whitington wheat, a plant of the Tobolsk rhubarb, the London Gardener's Gazette, and choice flower seeds. Several samples of Indian corn and other seeds, from different gentlemen. A sample of imported Italian wheat from J. Hathaway, of Rome. Several kinds of seedling potatoes, from John McLean, of Cayuga. Seeds from H. Collamore, Esq. Pembroke, Mass. Sample of premium corn, from W. Ingall, of Oswego. It is of the Dutton variety, beautiful—the ears eleven and twelve inches long, and well filled to the tips—twelve ears giving more than thirteen half pints of shelled corn. From the Rev. Mr. Colman, several valuable agricultural pamphlets. From J. W. Proctor, Essex Agricultural Society Transactions; from T. H. Webb, Dr. Jackson's Geological Reports, and other pamphlets.

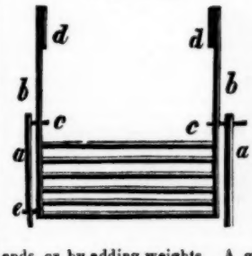
CORRESPONDENCE.

The Revolving Gate.

Norfolk, Litchfield co. Ct. March 5, 1839.

Mr. J. Buel—Sir—I feel a great reluctance to write for an agricultural paper like yours; but feeling it a duty to impart instruction as well as receive it, I herein will attempt to describe a kind of gate that I erected last summer, which I shall term the revolving gate. It is made as follows, viz:—Set two posts, 5 feet 4 inches high from the ground; let the top of the posts incline a little inward, so that the gate will not shut against them; bore a hole in each post 4 inches from the top, and mortise from the hole upwards, to receive the pin or axis of the gate, or the abutments of a stone wall may be substituted for posts. Take scantling say 10 feet long, 3 inches square, for uprights; frame slats, boards or poles into one end of the uprights, to the height of 4 feet; bore a hole in the centre of each upright for the pin or axis, which may be made of wood or iron.

[Fig. No. 13.]



I send you a drawing of this gate, the better to enable you to understand it.

a a Posts. *b b* Uprights. *c c* Pins, or axis of wood or iron, on which the gate revolves. *d d* Weights to balance the lower part. *e* A pin to fasten the gate.

The top of the uprights ought to just balance the bottom or gate part, either by large but ends, or by adding weights. A gate of the above description will swing up 6 feet in the clear. The only objection to this gate is, it will not receive a high load; this may be remedied in two ways—1st, by making them light, so that two men will take them out with ease; or, 2d, the posts may be made higher. If the gate is 4 feet high, and the axis is 8 feet high, the gate when it revolves will be 12 feet in the clear—but I should prefer the former.

The advantages of these over ordinary gates are—

1. They are cheap—they need not cost much if any more than posts and rails, and in the long run are much cheaper.

2. They are very simple, as any farmer can make them without the help of a mechanic.

3. They require no bracing to keep them from dragging.

4. They will not pull over the posts.

5. They are not liable to get out of repair by sagging, or being blown by the wind.

6. When opened they do not form an angle for cattle to run behind.

7. They are not liable to be opened by unruly cattle, and if properly balanced, a child will open them.

8. They will open more handily, when the snow is drifted about them.

9. If an awkward teamster drives a cart against one or both sides, (as some will,) if slightly fastened, he merely shuts the gate after him.

This gate may be fastened shut or open, by a pin or catch near the bottom. Respectfully yours,

HORACE HUMPHREY.

Draining.

Although much has been written on this subject, enough, one would suppose, to convince any agriculturist of its utility, and instruct him in the best mode of performing the operation; yet hundreds of dollars are annually thrown away by injudicious draining; and we deprive ourselves of other hundreds, by not draining at all. I have mowed two or three acres of land, (or rather of mud,) some ten or twelve years, and the hay, (if hay it may be called,) has hardly paid the expense of mowing. A line of springs breaks out along the upper side, the waters of which, slowly meander to a neighboring creek. Three or four years ago, I undertook draining, knowing, perhaps, as much about it as some of my neighbors, and practising full as well. I cut ditches from the springs directly to the creek, say eighteen inches deep, and shallowly left the shallow things open for the frosts of winter to fill: but the sequel proved that all was not right; for my meadow was ne'er the better for all my labor. But thanks to the Cultivator for a better system. Last fall I undertook again, with about half an acre for an experiment. I ordered a drain to be cut two and a half feet deep, and two feet wide, from the creek to within a rod of a fine living spring, in the line of my orchard and meadow, (which spring I did not want to injure,) and then branch off to the right and left along the dry land. By digging this depth, we cut through the clay subsoil, into gravel, when we came into which, ever and anon a vein of water would tell us, that all was going on well; and it went well enough till we came to within a little over a rod of the spring, and then it went quite ill; for all at once, the water gushed up from the bottom of the drain, and away went my fine spring; and two others, one two, and the other three rods distant, were dry in fifteen minutes. Whilst we were digging, some of my neighbors, knowing my intention, advised me by all means to leave the drains open; but I was just stubborn enough not to mind them; for I first flagged the bottom of the drains with flat stones, well fitted together. I then placed narrow stones on each side, and flat ones on these; then filled with small stones to within a foot of the top, then inverted the sods on these, and finished with loose earth. I then tore up the hassocks with a plough, raked and burned them, and spread the ashes; sowed the ground with timothy seed, covered it with manure, and scarified it with an iron toothed harrow. What the result will be, time only can show; but this much I know, the ground that, last summer, dry as it was, would mire a team, is now dry enough to plough, and the timothy looks well. S. HEATON.

Plattekill, Ulster, 4th mo. 8th, 1839.

Theory in Farming.

Near Brownsville, Pa. December, 1838.

Hon. J. BUEL—This has been pronounced an age of improvement, and very truly; but while the mechanic arts have been brought to a high degree of perfection, and improvements in them widely and rapidly disseminated, agriculture, though it has made great advancement in some places, in others remains almost stationary. Now, what is the cause of this difference in these two branches? It would seem to be that mechanics have greater advantages for becoming acquainted with, and appreciating the value of distant improvements in their business; while farmers, from their habits and other circumstances, are forced to rely on themselves for improvements, or at most are confined to their own vicinity; consequently, improvements are slowly disseminated. The only remedy for this evil is to establish some channel, by which improvements, made in one section of country, may be communicated to the others. This channel, is books or agricultural papers. But against book farming, exists a long established prejudice; and the mere mention of theory in farming excites in the farmer a perfect abhorrence; but with what justice, let us further inquire, as it is a matter of great importance. A theory is nothing more than the conclusion at which we arrive after examining the laws of nature. If we understand these laws correctly, and form our theory accordingly, our theory will be correct; if not, it will fail. Every man (farmers included) forms a theory, or in other words, a plan, before he commences any operation. Watt, with his steam engine; Arkwright, with his spinning jennies; Davy, with his safety lamp, and Archimedes, with his mirror; each, made himself correctly acquainted with the laws of nature, on which he wished to operate, and on these, based his theory. Now, in these cases, had there been no theories, there would have been no inventions. But, as theory is admissible in the mechanic arts, why not also in agriculture? Nature is as uniform in her operations in one case as in the other. If the chemist tells us that alkalies neutralize acids, and that lime possesses the properties of an alkali, and if we know that some acid exists in the soil, is not the conclusion legitimate, that the soil will be corrected by the application of lime? This now, is mere theory; yet, we would feel justified in relying on it as strongly as though it were demonstrated. If also, as Davy has shewn, certain gases serve as the food of plants, and these same gases are given off during the fermentation of manure, who would not repose perfect confidence in the theory which would bring these gases in contact with the plants rather than permit them to escape into the air? Draining, also, might be cited as a complicated theory; but on that account, none the less certain in its results. In fact, nearly the whole routine of farming is theory. 'Tis true, many errors are committed in theorizing, but these must be laid to the ignorance of the theorist, and not to the system by which he attempts to arrive at that conclusion by his reason which he cannot reach by sight and touch. But our farmers tell us they want something "practical," and if we should hand them the Cultivator, and tell them it contains the experience of its correspondents and contributors, it will be denounced in round terms as mere book-farming, which deserved no credence, because forsooth they had not seen it. As though they would discriminate between what their neighbor told them viva voce, and that which he communicated to them by his goose-quill. This reminds me of the oriental despot, who dismissed from his empire, as a liar, an ambassador, who told his celestial majesty, that in his own country, water became in winter so hard that armies passed over, for the sage reason that he had never seen the like. While this old prejudice, and the ignorance on which it is founded, and which forms its chief support, remain like ramparts, to stop the wave which is making in our favor, how can we expect to be carried forward to that glorious goal to which we seem destined? G. E. H.

Farm Buildings.

Plattekill, Ulster co. 4th mo. 8th, 1839.

FRIEND J. BUEL—Among the many appendages to a farm, and the means of facilitating the labors of husbandry, I consider convenient buildings as holding a conspicuous place; and notwithstanding many plans, with different degrees of merit, have graced the columns of the Cultivator; yet I offer the plan of a small building I have lately erected, which, to publish or to be thrown aside with other waste papers, is discretionary with thyself.

[Fig. No. 14.]

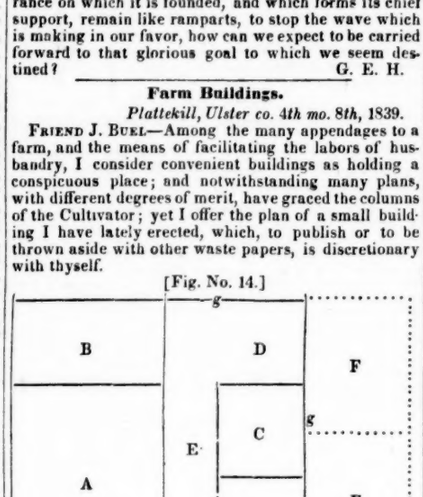


Fig. No. 14, is the ground plan of the building, which is erected on a side hill. A, is a cellar 14 by 16 feet.—B, a space between the cellar wall and the north foundation of the building, filled with earth. C, C, hog-pens, 8 feet square. D, a room for boiling food for hogs, and communicating with the cellar by the alley E. *g, g,* doors. F, F, yards.

[Fig. No. 15.]

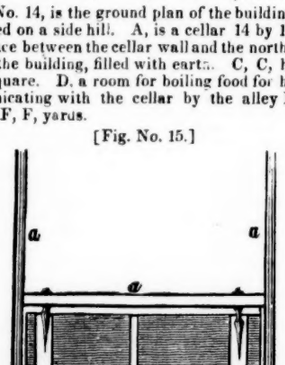


Fig. No. 15, represents the partition between the alley E, and one of the pens. *a, a, a,* the frame; *d,* a door; *b, b,* brackets; *c,* a latch, made fast at *f,* by a bolt; *g, g,* hinges. Under this door, is placed the trough; a piece of board 6 inches wide is nailed to each post, one directly over, the other beneath the latch; in these boards are two notches to receive the latch, so that in two seconds I can shut the hogs from the trough, and have it open to the alley, by lifting one end of the latch out of the notch, and pushing the door back to the opposite side of the trough; when it falls into another notch, the other end fastening in the same way above. This done, I can fill the trough without having to combat the greedy animals, and they have an equal chance after the door is swung back to its place.

Over the cellar, is a building 20 by 24 feet, 14½ feet posts, for a carriage house below and granary above; over the hog-pens, the roof of which is low, is room for housing sleds, tools, &c.

Now the advantages of this building are these—First, I have much room under a small roof;—second, I can draw my potatoes into the carriage-house, and shovel them through a trap-door into the cellar, without having to carry them in a basket, as I always have done, and many still do;—third, the cellar is on a level with the swill-house, or boiling room, so that there is no lugging them up stairs;—fourth, I can, by placing my feed tub in the cellar, boil potatoes for my pigs in cold as well as warm weather. S. HEATON.

American and British Agriculture Contrasted.

As a large amount of our scientific knowledge of agriculture is derived from British works, let us inquire how far the system adopted there should be modified so as to suit our circumstances; for difference of circumstances renders a difference of system necessary. Many considerations are necessary to be taken into account, in order to determine the relative value of different systems of agriculture; and that one adopted, which suits best the respective circumstances of each. The agriculture of China would not answer for England; nor is that of England, in all respects, suited to the United States. For, first, the rent of land there is exceedingly high; consequently, it becomes necessary that every acre shall produce to the full extent of which it is capable. This high rate of rents is owing to a superabundance of competitors, and but a limited supply of land. There, land is the chief article of value, and hence the chief object of attention; hence a greater outlay would be justified on the same extent there than here. Secondly, on the contrary, in this country, labor is the great article of value. The comparatively low rate of wages in Great Britain, enables the farmer to make improvements which would never compensate in the United States. There, it enables him to bestow more care upon, and work more frequently and thoroughly his soil. We cannot adopt the system of England, for the same reason that she cannot adopt that of China, viz: difference of wages; for best imformed agriculturists are aware that we cannot bestow the same labor on the same object as the English. There is a medium point beyond which the extra profit does not justify the extra labor. This point changes with the change of circumstances. With us it is exceeding low. Thirdly. In England, the superabundance of capital, and low rate of interest, enable the farmer to make those improvements, and farm to that perfection, which would not be justifiable in the American farmer. Many of our farmers can appreciate the value of improvements, but their means are yet too limited to advance with the gigantic strides of the wealthy farmers of England. Grain does not bear the same price here as there. This high price of agricultural produce, and consequent profitablenes of the business, furnish both the inducement and means of improvement. This flourishing state of agriculture arises from legislative encouragement; large proportion of consumers to producers, and great facilities for transportation and exportation; in all which, we are far their inferiors.

All these causes co-operating, suggest that we should adopt a somewhat modified system, until the obstacles which impede our course, shall be removed Yours respectfully, G. E. H.

Mode of applying Manure—Antidote to Grubs.

Sing-Sing, April 17th, 1839.

FRIEND BUEL—I frequently notice in the Cultivator, that your advice to farmers respecting the application of manure, to tillable land is, to apply it in the spring for hoed crops, by burying it with the plough to the depth of the soil; and you do not seem to admit of any variation on account of the different kinds of soil. I admit that where the soil under cultivation is dry, it may be best to manure for hoed crops,* and that it should be incorporated with the soil, but not buried very deep. (I write this, under the supposition that farmers, in this country, do not make manure enough, to apply it more than once to the same land, in the course of a rotation of crops.) But there is another description of soil, which, if ploughed at all, should be manured in the fall for the winter grain crop, in preference to any other. I allude to soils naturally moist, and particularly to those underlaid by hardpan; first, because on such soils, without manure near the surface of the ground, winter grain and the young timothy, is apt to freeze out, besides making it very uncertain for clover, the year following.

The rich juices of the manure, in the fall and spring, leach among the roots of the plant, giving it strength and vigor. By being light and spongy, the soil does not settle away from the roots of the young plant after a frost, as does the earth alone. Again, it is all important to most parts of the country, to keep the soil in a state of progressive improvement. If the manure be applied in the spring to a hoed crop, and after that we take two more crops of grain before seeding, we leave heavy land, but little if any better than we find it. And the succeeding grass crops, on which we mainly depend for the means of enriching our land, are sadly deficient in quantity. If we manure in the fall for winter grain, the succeeding crops of grass will be heavy, and when the ground is again turned up for corn, it will bring, I think, as good a crop without, as it would the time previous with manure, and that too, without deteriorating the soil to the condition in which the manure first found it; then our stock of manure on hand may be applied to enrich another piece of ground. If at the commencement the land is too poor for corn without manure, do

* We contend that no hoed crop, except potatoes, should be planted upon any but a dry soil—and that even potatoes should not be put upon a wet one. Under, or furrow draining, will render any soil dry, where there is a sufficient declivity to drain off the water.

not plant it, but summer fallow and sow winter grain, and manure at that time, for the reasons above stated. Now for the proof: a few years since I had two pieces of stiff clayey soil broken up, they were both poor and covered with moss, one I summer fallowed and sowed with wheat and grass seed, after spreading about twenty loads of manure to the acre on the furrow and harrowing it in with the wheat; in the spring following, I sowed it with clover seed. On the other I spread about twenty loads to the acre on the soil, ploughed it in about three inches deep,* (the depth of the soil,) and planted it with potatoes, had a tolerable crop, took them off and sowed rye, and seeded as I did the first piece; the result was, that I had from the first, full fifteen bushels wheat to the acre, the next year an abundance of clover, and for two years more, clover, timothy and red top, about two tons to the acre, and is now rich enough to bring good corn without manure. From the second piece I had about four bushels rye to the acre, hardly a spear of clover, and something like three-fourths of a ton of grass to the acre, and is to all appearance as poor as when I broke it up.

We well know that the enriching properties of unfermented manure will leach away, thus where it is applied to grass grounds before the spring rains, the effect on the grass is surprising. May not its virtue, when buried beneath the soil, leach still farther down, and is it an expensive way of enriching a subsoil without the aid of the sun and atmosphere? Heavy soils are seldom managed as they should be. It would generally be better to plough but little and manure that highly, and top dress the remainder to renovate the grass, rather than plough much and risk getting any thing, besides toil and trouble. I will add, that in summering manure, I make it into a compost.

I have been informed by a friend, on whom I can rely, that to arrest the ravages of the grub in corn, as soon as you find they are troubling it, take tobacco, add water and boil it up until the decoction is strong enough; pour about a wine glass full on each hill; the remedy will be effectual, the cost trifling, and there is the consoling reflection that a filthy weed is applied to some good purpose. Yours, &c. JESSE RYDER.

Transplanting—Protecting Brick and Stone Walls—Culture of Onions.

Stockbridge, April 27th, 1839.

Mr. BUEL—Although not a subscriber to your paper, I have received so much pleasure from it, that I feel bound to make a return, if it is in my power.

I fancy I can write upon two or three subjects on which your correspondents are soliciting information. I begin with the letter of Mr. Seitz, in the Cultivator of March. I beg to tell him that I have transplanted roots, such as sugar beet, ruta baga, borecole and mangold wurzel, with the greatest success for ten years past. I prefer it; but I must be candid, and tell you that they consider me here as an enthusiast. I prefer it, because I raise the young plants with the greatest care in my garden, so as to make them a great deal more thrifty than they would be in the lot. They are placed in the very best soil; highly manured; and if a drought comes on, are watered. Young plants, like young animals, require to be taken great care of; if this is well done, half the toils of agriculture are accomplished. Again, I have great time to prepare my soil, to carry out my manure, and to make the necessary arrangements for after culture; if this is well done, there is no danger in transplanting. I place a garden line to mark my rows; I give a scratch with the fingers, joined together, in the loose soil, and the root is deposited in a reclining position; this is the German method where mangold wurzel is cultivated in the highest perfection.

A gentleman from Morristown, in the same paper, inquires as to the best method of protecting brick walls against a driving easterly storm. I came here from India, where we have six feet of rain in four months; it requires some attention, in the art of building, to protect you against such a climate. Many houses have a broad veranda which brings the roof within nine feet of the ground; this makes the body of the house dry; but I had, what is called there, a top sail house; that is, two stories, to protect my walls, which were substantially built of stone, and well stuccoed. I had a projecting roof of near six feet. Nobody can imagine the comfort of allowing your windows to be open during a heavy storm of rain. A long driving storm will make brick walls damp; but this dampness is greatly increased by the sheets of water which perpetually fall from the roof. My house, in Stockbridge, has a roof of four feet projection, and I have received great advantages from it. The greatest expense in building, are sashes, blinds and window frames; these are well protected, and will last much longer.

Now, to the third subject. I was amused at some inquiries I saw, from a gentleman from Pennsylvania, on the subject of onions. In Bombay, where I lived the greater part of my life, this root is cultivated in the highest perfection. The mode of cultivation was no doubt carried there by the Portuguese, who, with the Spaniards, produce a fruit that we know nothing of here. It sells in the markets of London, for fourpence and sixpence a piece. The fruiterers keep them in their stores; it is remarkable for its great mildness; the great perfection of the root depends on irrigation and very high manuring, which, by the way, can be used only with irrigation; the seed is sown at the end of our rainy season; when that is over, the ground is prepared by having beds made about six feet square, so as to contain about four inches of water; gutters pass between two rows of these squares. The young onion plants are pricked into the mud, and well manured; during the growth of the plant it is enriched three times, with powdered fish, and in less than three months the crop is brought into market. I have succeeded in this country in producing an onion equal to what I have seen elsewhere; but the climate here is too cold and too uncertain, and the season too short. In Pennsylvania, this would be a branch of industry from which important results might follow. Yours respectfully, L. ASHBURNER.

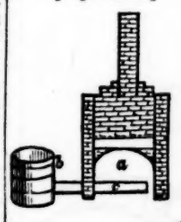
* A three inch stratum of soil, especially with a tenacious and wet subsoil, cannot be expected to produce much of any crop, especially of tap-rooted plants, like clover, with or without dung.

Boiler for cooking Cattle Food.

Hardeman's Cross Roads, Tenn. April 1st, 1839.

JUDGE BUEL—Sir.—For several years past, I have been much more in the habit of attending to my farm, than writing, but as my paper and pen are before me, I will give you a description of my neighbor Bostick's boiler, which he uses for the purpose of boiling food for his cattle and hogs. It is simply a cast iron pipe, about five inches in diameter and six feet in length, closed at one end and open at the other end. It is fixed in the fire place of the kitchen. By placing it across the fire place, next to the back, on the hearth, and the open end of the pipe extends through the jamb of the chimney about six or eight inches, and passes into a tub or trough, which has a circular hole cut into it near the bottom for the reception of the pipe, which is prevented from leaking, by being corked around with tow. Then by putting water into the tub with corn, or whatever kind of food you wish boiled, and making a fire in the kitchen (which is usually done in this country three times during the day) the pipe becomes very hot and causes the food to be boiled very done.

[Fig. No. 16.]



It surpasses any thing of the kind I have ever seen, on account of its simplicity, convenience and economy of fuel; for we are necessarily compelled to have a fire almost constantly in our kitchen for cooking, and the same fire will serve, with this kind of a boiler, to cook food for hogs or cows, by which plan, they are kept in much better order and at much less expense, during the winter season. Your obdt. servt.

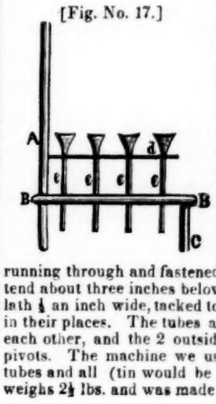
JOHN S. CLAYBROOKE.

Machine for sowing Beet Seed.

Agawam, Hampden Co. Mass. March 30th, 1839.

JUDGE BUEL—Dear Sir—I feel myself indebted for the many important facts communicated by my brother agriculturists through the columns of your very valuable publication, and would cheerfully contribute my mite in return for such a mass of important practical information. As the season is approaching in which the beet culture commences, I would describe a simple (but to me a useful,) apparatus which I have made use of for two seasons past, for sowing all kinds of beet seeds. We sow on drills or ridges, which after they are thrown up with the plough we brush on the top slightly with a hoe, or head of a rake, to obtain a flat surface on the centre of the drill; for forming the drill to receive the seed we use a wheel made of plank 1¼ inches thick, and 1 foot 2 in diameter, bevelled on each side of the circumference to nearly an edge in the middle, hung to turn on a pin between 2 handles, about 4 feet in length, which project forward of the wheel four or five inches; near the end a piece is framed in or nailed on to each crosswise in front of the wheel, in which is inserted a small wood or iron coulter or scratch on a line with the track of the wheel. The wheel is run upon the centre of the drills, and makes an impression or furrow 1½ inches deep and about the same width at the top, slightly compressing the earth at the sides and bottom of the drill, causing it to retain moisture, so essential to the germination of seeds. The drills thus prepared, we use the following machine for sowing, and equally distributing the seed.

[Fig. No. 17.]



A, a staff or handle 3 or 3½ feet in length, running through the flat piece B. B. six inches, and terminating at the lower end in an egg-shaped point or pivot; C. a pivot at the opposite end of the piece B. B. 6 inches long and shaped at the lower end like the former; *c c c c* 4 tubes with a half inch hole through the centre 20 inches or more in length, funnel shaped at the top (which may be formed of paste board or leather,) running through and fastened into the piece B. B, to extend about three inches below said piece; *d d,* a strip of lath ¼ an inch wide, tacked to the tubes to keep the tops in their places. The tubes are six inches distant from each other, and the 2 outside ones 3 inches from the pivots. The machine we use is made of white pine, tubes and all (tin would be preferable for tubes,) and weighs 2½ lbs. and was made by myself in less than 2½ hours. After the seed is prepared by soaking, or wetting and rolling in plaster, or ashes, to fill their rough surfaces, that the seed may separate more readily, the machine is set up, the pivots in the drill, and a seed is dropt into each tube; it is then turned from the workman towards the right on the front or short pivot into the drill again, and a seed is dropt into each tube as before; it is then turned on the handle pivot, and so on alternately, dropping the seeds at each turn, &c. The workman can stand upright in the space between the drills, and the tubes being so near the ground that the dropping is not affected by the wind; the seed lies regular at 6 inches apart at the bottom of the drill; with a little practice in taking about the requisite number of seeds so as to separate freely, from the planting pocket, a person will drop at a decent walk, without much fatigue. We cover with the head of a rake run along back down nearly lengthwise the drill; if the soil is light and dry, run a hand roller over the rows of about 6 or 8 lbs. weight.

We also make our drills for ruta baga, with the before mentioned wheel, and sow the seed from a small tin box fastened to a staff or handle 3 ft. in length at angle of 45 deg. downward, having 2 holes to let the seed pass out in the lid, which when the handle is held upright is the bottom, filling the box half full of seed and holding it in the left hand over the edge of the seed drill, and rapping the box gently with a light rod in the right hand, a person will sow at a brisk walk with great regularity. Last season I sowed one quarter of an acre in this manner with less than 1¼ oz's seed, and they required considerable thinning after they came up.

I obtained from the Albany seed store, last spring 1 Rohan potato, weighing 6 oz. planted it on a dry sandy soil, where it suffered severely from drought for two months; the produce however was 34 lbs. many of them good sized tubers, and a few that grew very late in the season quite small—I have 6 hills in boxes growing in the green house planted about the middle of March, which I design to transplant in the field at the proper season, (the boxes being slightly made for that purpose.) The object is to see if very small tubers of that variety, if sprouted early, by artifical means, will produce large ones. The 2 tubers to make the 6 hills did not weigh one ounce in all. I may give you the result hereafter.

Yours with esteem.

JONA. E. FERRE.

Physiology—Vegetable and Animal.

DEAR SIR—In another number of the Cultivator you published my communication relating to the artificial crossing of vegetables, &c. which imitates, partakes of, and has an alliance with, the animal kingdom.

I have frequently met with insects in a dormant state, and at first supposed them to belong to the vegetable kingdom, and the first glance of the elephant only resembled a heap of inanimate matter. If we saw a tree approaching us we should suppose it to be an animal, but if it remains stationary, not possessing any muscular power, it is ranked among the vegetables, though it possess most of the properties of some animals.

The vegetable nor the animal can subsist without food, and upon the quantity and quality depends the health of both; either may be injured by food not adapted to their habits, their appetites or digestive powers.

Animals subsist most entirely upon vegetables; it is through the vegetable kingdom that the different properties of the earth are subtracted, suitable for the support of the animal kingdom; hence the vegetable forms the link between the animal and mineral, or inanimate nature.

I propose to add more respecting the structure of plants, and on the general analogy of vegetable and animal life; and I shall endeavor to notice that which may be useful and interesting to the reader, by referring to Good's Book of Nature for the ground work of the subject.

In the organized bodies and the structure of plants, compared with that of animals, I would first ask, where is the difference between the stone and the plant? If one be removed to another place it will suffer no alteration, by change of place; but as soon as the other is removed it will instantly sicken, and perhaps die. Both have proceeded from a nucleus or germ; both have a tendency to preserve their family configuration; and both have been augmented and perfected from one common soil. It is only by a minute attention to the relative histories, internal structures and modes of growth of the two substances, that we are enabled to offer any thing like a satisfactory answer; and by thus examining we find that the stone was produced by chance, and has grown by external accretion, and can only be destroyed by mechanical or chemical force; while the plant has been produced by generation, and advanced in size in proportion to, and by the nourishment it has received, and destroyed by death; its parts have been mutually dependent and contributory to each other's functions. The consistency of the internal power is unknown; differently modified, we meet with it in both plants and animals; and we denominate it *the principle of life;* and the substance thus produced is called an *organized being.*

The various bodies of nature arrange themselves under the two divisions of organized and unorganized; the origin of the former by generation, the latter a fortuitous origin. The corals, sponges and fuci form the lowest natural order among animals and vegetables; the corals seem to constitute the link that connects the animal and vegetable with the mineral world; it has, in different periods, been ascribed to each.

The difference which consists between the organization of the animals and the vegetables is not very clear-

ly marked out, and we characterize them more by description than by definition. We can readily distinguish the difference between animals and vegetables in their more perfect states; we find the plant confined to a particular spot, its nourishment derived from the same, and presenting no marks of consciousness or sensation; we behold the animal capable of moving at pleasure, exhibiting marks of consciousness and sensation; and a very high degree of intelligence ofttimes. Yet, if we should only lay down consciousness or sensation and locomotion as the two characteristic features of animal life, we should find our definition untenable; for while the Linnean class of worms affords instances, in perhaps every one of its orders, of animals destitute of locomotion, and evincing no marks of consciousness or sensation; there are various species of plants that are strictly locomotive, and that discover a much nearer approach to a sensitive faculty. Therefore the distinction between the animal and vegetable life, in their most striking form, fades away as we approach the extremities of the two kingdoms, where the mutual advances are so close and intimate that it becomes a task of no common difficulty to draw a line of distinction between them, or to determine to which of them an individual may belong.

Therefore when we give a distinctive character for animals and plants, we are compelled to resort to, and derive it from the more perfect of each kind; and to leave the extreme cases to be determined by the chemical components eliminated on their decomposition.

Yours, S. W. JEWETT.

Weybridge, Vt. May, 1839.

Culture and Profits of Squashes.

Narrows, L. I. April 24th, 1839.

Mr. BUEL—There are several varieties of squashes cultivated for the supply of the New-York markets, but the early white scollop-shell bush squash, is the one principally in vogue. This variety, although more profitable to the cultivator than any other, is not, however, the best for the table. We have a small striped squash, shaped like a heart, which is more dry when cooked, and far preferable in flavor. This last variety came originally from the vicinity of Schenectady, (about forty years ago,) and has since been kept pure by a few individuals. They are ripe about a week later than the first named variety, and are not fit to be pulled until they become so hard that the finger nail cannot indent their shells; they will remain on the vines without spoiling until frost appears in the fall. Probably the reason why the striped squashes have not come into more general use, and why the white ones continue to hold the ascendancy, is, our demanding the same or a higher price for them, although much smaller in size, and the fact that many of the citizens of New-York prefer quantity to quality. I have never known the seed of the striped squash to be sold in the seed stores, and have often been disappointed in purchasing what was labelled for the white scollop-shell, for the produce, instead of proving to be white, I have found to be yellow, although the papers had the usual marks of the Shakers on them.

The cocoa nut and the grey and white long neck squashes are excellent for fall and winter use, but not much cultivated in our vicinity.

The reason why many of the squashes sold in the markets are poor, is their being gathered too green, the cupidity of the cultivators inducing them to pull all that are of a good size, without reference to ripeness, so as to have them for sale as early as possible, to command the highest prices.

Squashes, like many other vegetables, will grow on almost any good soil, but a rich sandy loam with a red clover sod, on low ground, is preferable, and in such a situation, with proper management, they seldom fail.

For early squashes, in the beginning of April, (if the frost has disappeared,) we spread over the ground about thirteen two horse loads of street manure to the acre, immediately plough, harrow until mellow, furrow into hills five feet apart, and place three-quarters of a shovel full of the same kind of manure we use for cucumbers and melons into each hill, which is covered with earth about an inch deep: we then drop from fifteen to twenty seeds into the south half of the hills, (scattering them so as not to have the plants crowded,) and cover with fine earth an inch and a quarter in depth. About a fortnight after the first seeds are put in, we plant over, in the north half of the hills. Formerly I was not in the habit of planting over, excepting such hills as were deficient in plants, but experience taught me in 1834, the necessity of it; for on the 26th of April, after the plants were all up, a black frost swept them clean: by planting over, therefore, a greater certainty is insured of an early crop, which in the markets is of great importance.

Squash seed is far more hardy than that of cucumbers and melons, and will remain a long time in the ground without rotting. They require a rotation, and do not prosper two years in succession on the same ground.

The after culture of the plants is the same as that of cucumbers and melons, except ploughing between the rows when planted on sod at the first hoeing, and using the cultivator at the others. The plants are gradually thinned down to three in a hill, and the last hoeing is given a few days after the blossoms open.

The plants, like others of a similar nature, are liable to the depredations of black worms and yellow flies: it is a singular fact, that the latter often select a single plant in a hill and feed upon it in swarms, while the remaining ones remain untouched. I have frequently known single hills, and occasionally a large portion of some patches of squash plants very much injured, and sometimes destroyed, by a species of aphis taking possession and affixing themselves to the roots of the plants; they are about as large as a pin's head, of a green colour, and when the ground is carefully removed they are found adhering to the roots and stem. Plants infested by them in general either remain stationary or else gradually pine away: those that recover never afterwards flourish. I am unable satisfactorily to account for their appearance, but suppose them to be derived from the manure.

Squash plants on good ground continue in bearing until the frost in the fall destroys them.

Cocoa nut and long neck squashes require to be planted in hills eight feet apart, and at planting, a dozen seeds in a hill are sufficient.

The following is the number of hills planted. produce, (unsaleable ones excepted,) and amount of sales for the preceding four years, viz:—

Of early white scollop-shell squashes,

Year,	Hills planted.	Dozen sold.	Am't rec'd.
1835,	1,482	851	$179 82
1836,	1,482	1,146	372 00
1837,	1,590	858	167 86
1838,	1,554	780	208 25

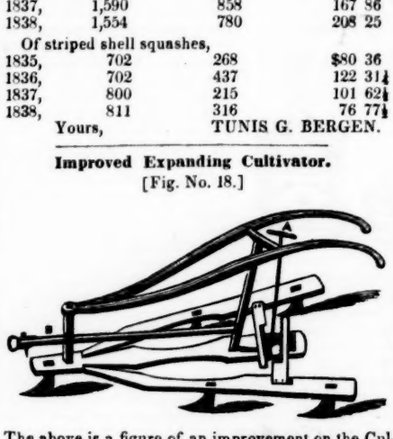
Of striped shell squashes,

1835,	702	268	$80 36
1836,	702	437	122 31¼
1837,	800	215	101 62½
1838,	811	316	76 77½

Yours, TUNIS G. BERGEN.

Improved Expanding Cultivator.

[Fig. No. 18.]



The above is a figure of an improvement on the Cultivator, invented by Jason Smith, Esq. It can be contracted or expanded at pleasure, without stopping the horse, (which is very convenient where the rows are not marked out regular,) by turning the handle A, which is connected by a half inch rod, with a cast iron cog wheel, four inches in diameter, which works in two slides screwed to the slats. The depth can be regulated by raising or lowering the beam B; a mortice is made through the hind end of the centre piece, of sufficient length to receive the wheel and both slats; the side pieces are fastened at the forward end by strong hinges. Yours respectfully. [No patent.] J. S.

Tyre, Seneca county, Jan. 3, 1839.

Dressing Hogs.

Schenectady, 2d April, 1839.

DEAR SIR—The following method of dressing large hogs may be useful to your readers; if you think so, publish it. After the hogs are laid on the lumber sleigh, or whatever else is used to dress them on, they are dusted over with finely powdered rosin, from a dredging box; then they are covered with horse blankets, and hot water sufficient to wet them thoroughly, is sprinkled on them with a watering pot. In a short time they will be scalded so that the hair will come off easily, and they will be cleaned as well as in the usual way of scalding in a cask. I received this information from Mr. John Clark, who told me he once had a hog which weighed more than six hundred pounds, dressed in first rate style by this method. Also from Mr. James Rosa, who a few years since, saw in Boston, Mass. several large hogs completely dressed, in the same manner. These are two of our most respectable farmers.

Last year, Mr. Clark raised some sugar beets, and found them so useful in fattening his hogs, that this summer he intends to raise a large supply for the same purpose. Respectfully yours,

CHARLES H. TOMLINSON.

EXTRACTS.

Address, by J. J. Viele, Esq.

Delivered before the N. Y. State Agricultural Society, February 6, 1839.—*(Concluded.)*

I feel as though I am occupying too much of the time of this society, but I cannot conclude this address without again urging the importance of having some system adopted for the diffusion of science, and the improvement of the intellectual character of our yeomanry.—Here, after all that is said on this subject, lies the great secret of improvement in agriculture. Disguise it as we may, there is a lamentable deficiency of knowledge in our agricultural community. We might as well expect a bountiful and luxuriant harvest from a neglected and half cultivated field, as to expect that our system of farming will make rapid progress in improvement, without in the first instance improving the mind. Why is it that we have schools for the professions, the advantages of which are enjoyed by the few, richly endowed by the state, and have none for the many who are engaged in the pursuits of agriculture? Why is it that science is allowed to shed her radiant beams upon every other occupation but that of tilling the soil? It cannot certainly be because she requires not her aid. Every different soil requires a different treatment, and almost every different plant requires different cultivation, different applications, and different ingredients in the soil.

"Nor every plant on every soil will grow;
The sallow loves the wat'ry ground and low;
The marshes alders: Nature seems t' ordain
The rocky cliff for the wild ash's reign;
The baleful yew to northern blasts assigns,
To shores the myrtles, and to mounts the vines."

Every operation of the farmer is a scientific experiment, and unless he understands some of the principles, and is able to reason from cause to effect, he is wholly unable to judge whether he labors for profit or loss.—Without science, he knows as little of the principles which govern the economy of his operations, as does the ox who draws the plough, or the horse who propels machinery. Educate him, then, for his occupation, enlighten and improve his mind, and rest assured that the improvement of the soil will follow. If the science of a Buel, can ameliorate and bring into a high state of cultivation and productiveness, the pine barrens of Albany, and that of a Colman, the worn out, sterile soils of Massachusetts, might we not expect that by its general diffusion, the whole state would soon be devoid of waste places, and with almost the art of magic, be converted into a blooming garden, teeming with fruits and flowers, and the golden harvests of plenty? Will not our state, then, adopt some liberal views on this subject? With a commendable spirit, it has endowed colleges and academies in almost every city and village in the state, but it is well known that comparatively few of the sons of our farmers find their way thither, and if perchance they do, it is for the purpose of preparing themselves for some other pursuit. It is equally obvious that the course of instruction pursued in our colleges is not well adapted to shed light upon rural labor. Let us then have a school, or schools, whose object shall be to qualify young men for the pursuit of agriculture. Let there be an experimenting farm attached, with workshops, where science can be directly applied to the useful arts. There chemistry would direct them in the amelioration and improvement of soils, in the economy and right application of manures, what soils are adapted to particular crops, and whether, to renovate, he should apply compost, lime, gypsum, marl, clay or sand. By mathematics, they would learn the science of computing by numbers, which would enable them to weigh and measure all articles, whether solids or fluids. By mechanics, they would become acquainted with the structure and use of tools, the principles of machinery, and the manner in which the moving power is applied. Botany would teach them the physiology of vegetation, the nature and uses of plants, their powers of generation, the alternation that should be observed for the best development of their powers, so that the the most perfect of its kind should be produced. Geology and mineralogy would inform them of what the earth is composed, and give them a knowledge, not only of its surface, but also what is contained in the strata beneath. From zoology, they would become acquainted with the natural history of domestic animals—also their character and constitutions. Entomology would point out to them the character and habits of the various insects that depredate upon crops, and often destroy the farmer's hopes. Attached might be a department for instruction in veterinary surgery. The constitution and diseases of domestic animals could then be learned, with the appropriate treatment and remedies. Millions might annually be saved to the nation, that is now lost for the want of general knowledge on this subject. In short, all the natural sciences might there be taught, their principles exemplified, and applied to every operation upon the farm and in the workshop. We have colleges, theological, law, medical and military seminaries, richly endowed by the government, furnished with extensive libraries and costly apparatus, for illustrating the sciences, with able teachers liberally supported; but poor agriculture, hitherto a discarded daughter of the state, whose industry sows the seed and gathers the harvest, on whom all depend, and to whom all look for the comforts and blessings of life, she can have no seminary for the education of her sons in the most useful of the arts. The liberality with which all the other seminaries and institutions have been endowed, does credit to the state, and why agriculture should be thus long overlooked and neglected, "is strange, passing strange."

The advantages to be derived from an institution of this kind are incalculable. Hundreds of young men would be annually emanating from its halls, locating in different parts of the state, who by their knowledge and their example, would diffuse light upon the various subjects connected with agriculture, and could not fail to have a most salutary influence upon the moral and intellectual condition of all within their reach. The results of the experiments in all the various branches of agriculture, the mechanic arts and the use of labor saving machinery, would be heralded forth from the agricultural press, thereby reducing to certainty their utility, in the minds of the community, and saving an immense expense that is now incurred in their investigation. Under such an influence, I fondly anticipate, that soon, perhaps within the life-time of the present generation, a very great change would be wrought in

the condition of our agriculture. Soon the productions of the state would be doubled—soon would the moral and intellectual condition of her sons be elevated—the entire face of nature would be changed—our rich and fertile valleys would double their increase, the barren plains be covered with verdure, "the desert and solitary place made glad, and the wilderness blossom as the rose."

What a vast field is this for the exercise of fond anticipation! What a delightful view is here presented for the imagination!

> "Oh, knew he but his happiness, of men
> The happiest he; who far from public rage,
> Deep in the vale, with a choice few retir'd,
> Drinks the pure pleasures of the *rural life*."

Nor is this the dream of a visionary, or the vagary of a heated and over sanguine imagination. What is here, by some deemed wild conjecture, or vague speculation, has in Europe, even under their despotic laws, become matters of history and well established fact. Schools of this character have there been established, not only by individual effort but also by the governments. Their beneficial effects are felt and acknowledged, in their increased productions, taxable property and value of the soil.

And has not the time now arrived, when our state, with her ample resources, will aid this noble enterprise? Will she not extend her hand, open and willing, to promote this great object? If she will not be generous, I appeal to her justice; and I ask whether she can longer refuse this pittance to poor, degraded, despised agriculture? Is she, who in war nerves her arm, and sends forth her sons to battle—she who in peace supports the government—pays the taxes—builds our splendid monuments of art—excavates our canals and freights them with the fruits of her toils—who feeds all and clothes all—and supplies all with the necessaries and luxuries of life—is she, I ask, to be denied the meagre pittance of a school to educate her sons? If this be so, I turn, as my only hope, to the public spirited and benevolent individuals in our midst; and I appeal to their generosity, to know if they are willing that this noble project should fall, still-born to the ground? What an opportunity is here presented, by the founding of an institution of this character for posthumous fame—for immortality! Have we not in this great state, some patriotic and benevolent Williams, or Brown, some public spirited Girard, who by doing a great and a good act, will enrol his name upon the scroll of fame, as a benefactor of the public, and confer blessings unnumbered upon the human race?

Farmers' Luxuries.

[*From the Quarterly Journal of Agriculture.*]

It has frequently been matter of surprise to us that small farmers, from generation to generation, pass through life at the same dull pace, going over the same rugged ground, plodding the same apathetic routine, unambitious to vary and increase their innocent recreations, when every facility is within their power to vie with their wealthier brethren in the possession of so styled luxuries. We approve that excellent aphorism, "To enjoy is to obey." Our beneficent Creator has placed innumerable sources of gratification within the reach of all his creatures. His intention evidently is, that the productions of various climes should be consumed by nations "far asunder as the poles;" that Scotland should quaff the vintage of the sunny south, that shoals of her herrings should find their way in savoury heaps to the inland dwellers of wide continents, or He would never have put it into the hearts of men to construct great ships, and to steer their course over the trackless ocean by the guidance of His heavenly sun and moon and stars. If as Lord Bacon says, "Admiration is the superlative of praise," it follows that the more we enlarge our sphere of innocent and rational enjoyment, the greater the number and variety of proofs of His creative power and wisdom we collect around us, the more must our admiration be excited, and the higher ought to be our feeling of gratitude, veneration, and praise. "Use, but do not abuse the good gifts of God," appears to us to be a text worthy of the Creator and His creatures, one that is also, in this restrictive age, cruelly neglected. But to our subject of "Farmers' Luxuries."

Who ever heard of small farmers indulging in those horticultural dainties and delicacies that require the aid of frames and hotbeds to perfect their growth? Yet who would point out a legitimate objection to an enjoyment so entirely innocuous? Why should cucumbers, (in frames of course, we mean) grapes, peaches, melons, and even pine-apples, be reserved for the gratification of patrician palates, any more than that the bloom of delicate tinted flowers should be kept sacred for the solace of the eyesight of the wealthy; or that their grateful odour should refresh exclusively the olfactory nerves of the aristocracy? Employment is the bliss of life: there is not a more unhappy being than the man or woman who is not obliged to exert those mental and bodily functions which have been beneficiently bestowed upon us, to be used for the preservation of our health; nor can there exist a more sickly, silly, pretty sounding, pernicious, little southern phrase than "*Dolce far niente*." "*Amaro far niente*" would be nearer the truth. Luxuries that may be attained, without unjustifiably employing time and capital, are not only perfectly admissible at the tables of those who can afford them, but the man is to be applauded who seeks to secure them. The extra delicacies which we obtain by our manual dexterity and industry we are fully entitled to enjoy.

A man, however his time may appear to be entirely occupied by his business (we speak not, it is obvious, of our unhappy brethren in squalid lanes and dismal manufactories), say that of a farmer, for example, has always many hours in a week entirely unemployed, which are lolled, or dozed, or smoked, or drunk away, unless he have a love of literature strong upon him. A very few of these wasted hours might be turned to great advantage by devoting them to the cultivation of *luxuries*; and not only luxuries for self-gratification but for the sale of them, whereby many little enjoyments of other kinds might be easily attainable.

Farmers who cultivate their own land possess advantages for the accomplishment of the plan we advocate beyond those who rent their farms, who are bound by the terms of their leases from using the manure for any other purpose than the benefit of the land under tillage. In some parts of the southern portion of our island, we have been informed that the occupant is restricted from the privilege of manuring his garden with any portion of it. This is as arbitrary as it is absurd, since it is an admitted fact that manure is in a better condition for farming crops *after it has undergone that first stage of fermentation, which is precisely the state in which it would effect the desired end in obtaining "farmers' luxuries."* An outlay of a very few pounds in the first instance, would ensure a valuable return, without any increase or renewal of expense for many years. Melon-pits, peach-pits, &c., have a fearful sound; a poor man would as soon think of a service of plate for his table as of such costly and exclusively patrician erections in his garden; but we hope to prove to our farming friends, especially such of them as are industrious themselves, and have one or more sons at home to assist in the labours of the farm, that the erection of a melon-frame, peach-pit,* &c. with their cost and management, is to be as easily and cheaply obtained as any other portion of his stock.

If a man have a mechanical turn, as it is styled, (and how desirable, how valuable, is a talent for carpentering and bricklaying in all situations where the income requires strict attention to meet the demands of a family!) many, many pounds may be annually saved by exerting that talent. We have seen this exemplified in an industrious family, in which the results have been most satisfactory. *Practical* plans are those which we advocate and advise; with vague schemes we would not puzzle ourselves or our readers. The stagnant state of our agricultural brethren is beginning to interest the lords of the soil, and associations are forming to better their condition, by teaching them many elementary principles of subjects on which they are profoundly ignorant. May these institutions prosper! In the mean time, let us, in our humble way urge upon every farming man these simple truths—that active employment is a privilege, a boon bestowed upon the working classes as a compensation for the want of that wealth which the poor erroneously covet through ignorance of its attendant miseries; that industry brings contentment, that blissful feeling which wealth can never bestow; that the fiat which has been called "the curse of the ground," namely, "Thou shalt earn thy bread by the sweat of thy brow," is one of the kindest and wisest of the Creator's commands; that he who best knows how to exert the mental and bodily powers which have been given him for his benefit, is a wise and enviable man; that "knowledge is power," and not only power, but happiness. Hence no one should sit down in the supine consciousness of being a farmer, and merely a farmer, to plough, and sow, and reap and jog to market, and count his gains, and take his pipe and glass, and so to bed the whole year round, and "seek to know no more." As we have said already, there are many hours, nay, whole days, when the routine of a farm moves sluggishly, nay, when it must stand still; these are the opportunities that have been beneficently ordained, and which a mind of energy will gladly employ, in order to better his own condition, and, by the influence of example, that of his children and dependants.

Idleness is mischief, it is seldom mere inaction; and no stronger proof of the truth of this axiom need be adduced than the evident improvement in the morals of our artisans in the thickly populated towns, since the introduction of Mechanics' Institutions. Those hours which they formerly passed in *idleness*, in beer and gin shops, fostering a spirit of fierce discontent and disaffection, are now devoted to peaceful acquisition of science to attain wisdom as well as knowledge, to elevate their minds and to improve their condition.

Parents are little aware of the immense benefit, in every possible way, that results from encouraging industrious habits in their children. Very young lads may be made of essential use in a homestead, and at the same time their enjoyments would be to themselves delightful amusements. A boy who evinces the slightest turn, for mechanics, should always be indulged in his partiality and be encouraged to try his skill. A chest of rough and simple tools might be given as a reward, and opportunities afforded, should his father be unable to instruct him, for the acquirement of the right handling of his hammer and plane. Once set afloat, his own enthusiasm will carry him forward, and his parents will reap the double recompense of adding to their slender income by his pleasant exertions, and of seeing the effects of industrious habits upon his mental and bodily health, which, but for their judicious fosterage, might have been laid waste by idleness with all its train of evils.

* Our farmers want neither melon-frames nor peach-pits. These fruits generally ripen well in the open ground of our genial soil and climate. The farmers luxuries which a bountiful Providence has placed within their reach, *and for their use*, are the fruits and culinary vegetables, which our climate will mature, and which add as well to the health as to the innocent enjoyments of life—the apple, the pear, the plum, the grape, &c. of the best varieties—the beet, the onion, the melon, the tomato, the rhubarb, the asparagus, &c. which are the desire of the rich, which the grower alone can enjoy in perfection—and which, we are sorry to say, very few of our farmers do duly appreciate or enjoy. And the ornamental department, which may tend much to improve our minds, and to enlarge the sphere of our innocent enjoyments, is almost wholly neglected, as though the Giver of all Good had prohibited the use, to the tillers of the soil, of what he has placed within their reach, and impliedly for their special benefit.—*Cond. Cult.*

Sheep Husbandry.

BREEDING—THE GENERATIVE AND URINARY SYSTEMS.

[*From the Library of Useful Knowledge, Farmers' Series.*]

The object of the sheep-master is to raise and to retain that animal which will pay best for the consumption of its food. With the breeder of cattle, this is a very simple affair—he selects and cultivates that animal which will attain the greatest maturity and weight in the shortest time, and on the least quantity of food. The dairyman wishes to add another quality to the aptitude to fatten, namely, the yielding, and for a considerable time, a large quantity of milk. The sheep-breeder also derives his profit from two sources, the early maturity of the carcass, and the quantity and useful properties of the wool. Both will occupy his attention; the first, in every case, and as his grand object; the second, as valuable, but regarded more as a subsidiary.—How shall he attain his objects? He looks carefully over his flock, and he observes that some of his sheep—the food and general management being the same—fatten more quickly than others. There is the same attention paid to all, but the profit is abundantly more from some than from the majority of their companions. He is anxious to account for this. He compares these sheep with some of their fellows, and he observes that there is an evident difference of conformation, a fineness of bone, a roundness and compactness of form, a condensation of substance, and a beautiful proportion of every part.—He studies this, and he finds that there is more or less of this conformation in every sheep that materially outstrips his fellows. He inquires farther, and if he has employed different rams, the one that possesses most perfectly this peculiarity of form, and its accompanying aptitude to fatten, was the parent of these promising sheep, or their dam had these points in considerable perfection. He now begins to form some notion of the kind of animal that the profitable sheep should be; and he has living proof that these valuable properties may and will descend to the offspring.

His pride and his interest are involved, and he examines these flowers of his flock with still closer attention. He finds that, in the handling, they present as great a difference to the feeling as they do to the eye. There is a softness, a springy elastic softness, in distinction from the hard, harsh, unyielding nature of the skin, and the texture immediately beneath it in others, which once impressed on the mind, can never be forgotten; and he associates this with the certainty of early maturity.

Having satisfied himself with regard to these things, he dismisses the ram that does not exhibit these qualities, or that fails in getting lambs possessing them; and the ewes that do not approach to the beau-ideal which he has formed in his own mind, or whose lambs are inferior in appearance or in thriftiness. He fattens these and sends them to the butcher. He collects together the lambs as soon as their form and qualities begin to develop themselves—a little experience will enable him to judge accurately of this at a very early age—and without hesitation he discards those that are not up to the mark, whether ram or ewe-lambs. He puts by a few of the very best of the males for a second examination at no very distant time, and every faulty one is selected from the ewe-lambs, and prepared for the butcher as quickly as may be. In this way the flock is systematically and rapidly improved, and the breeder is well repaid for the diligent attention which he has given to this important object. *If his flock is large, he will find in this principle of selection, every thing that he can want.*

There is one point more, the importance of which he cannot overrate—*he should never preserve a lamb that has an evident and glaring defect.* In proportion as his flock improves, he should regard this as a rule that admits of no exception; for the principle that "like produces like" extends as powerfully to the defects as to the excellencies of the animal. The progeny infallibly inherits the defects as well as the excellencies of the parent, and no improvement in a good point, already possessed to a considerable extent, can compensate for the introduction of an obvious blemish.

On this principle of selection, the breeder will continue to proceed, if his flock is tolerably large, and he will even be jealous of the introduction of a foreign breed. The good qualities of his sheep, transmitted from one generation to another, are no longer accidental circumstances. They have become a part and portion of the breed, and may be calculated upon with the greatest degree of certainty. They constitute the practical illustration of the term *blood*. It would be long ere the good qualities of a stranger would form an identical portion of the sheep; and no animals will elsewhere thrive so well, or improve so rapidly, as on the pastures on which they and their forefathers have, generation after generation, been accustomed to wander.

But, after a while, with a considerable degree of certainty in a small flock, and too frequently in a larger one, the sheep will continue to arrive early at maturity, and to fatten as kindly as before, or even more so, but they evidently are decreasing a little, and yet only a little, in size. They do not bear the severity of the weather quite so well, and perhaps they are somewhat more subject to disease The farmer will do well to take warning. He has been breeding too long from close affinities; and he must introduce a little different and yet congenial blood. He must select a ram from a soil, and kind of food, not dissimilar to his own, although at a distance perhaps as great as convenience will permit—with points as much resembling his own sheep as may be—quite as good as those in his own flock—superior if possible in some points, and inferior in none, and he must dismiss his own ram for one year, and make use of the stranger. His purpose will be completely answered. He will have infused a tone and vigor among his sheep—they keep their propensity to fatten, and they re-acquire that health and hardiness which they used to exhibit, and the farmer is enabled to go on satisfactorily for a certain number of years; when experience will tell him that a stimulus, in the form of a little foreign blood, is again wanted. Thus is illustrated that axiom with regard to all our domesticated animals—"selection with judicious and cautious admixture, is the true secret of forming and improving a breed." The errors to be avoided are, too long continued and obstinate adherence to one breed; and, on the other hand, and even more dangerous, violent crosses, in which there is little similarity between the soil, the pasture or the points and qualities of the animals that are brought together.*

The ewe is sufficiently matured for breeding at fifteen or eighteen months. The old farmers did not employ them for this purpose. until after the second shearing; but the improvement in the breed, which develops so soon a disposition to fatten, and prepares them so much earlier for the market, hastens also the development of the generative powers in the sheep.

The ewes and rams being kept in different pastures, the farmer can select his own time for bringing them together, and consequently, the time for yeaning; and that will depend on various circumstances. Where there is a demand for house-lambs, or the farmer adopts the rearing of such lambs as a part of his system of management, the period of yeaning should commence as early as September or October, in order that in November and December the lambs may be ready for the market, and, at which time they will obtain a good remunerating price.

In the general course of breeding, however, it is desirable that the lambs should not fall until the cold of winter is over, and the pasture begins to afford some food for the little ones. This is peculiarly important in bleak and exposed situations. Thousands of lambs die every year from the cold to which they are exposed as soon as they are yeaned. On the other hand, there may be some inconvenience and danger if the period of lambing is too late. Hot weather is as fatal to the mother as cold is to the offspring. It frequently induces a dangerous state of fever; and both the mother and the lamb may be then injured by the luxuriance of the grass. If the lamb falls late in the season, it will be longer ere the ewe can be got ready for the butcher, and the ground cleared for other stock—and, in addition to this, the early lambs become larger and stronger and better able to resist the cold of the succeeding winter. The yeaning time will, therefore, be regulated by the situation of the farm, the nature of the pasture, and the demand from the neighboring markets. It will seldom, however, commence before the middle of March, or be postponed beyond the middle of April.

The duration of pregnancy is about five months, or 152 days, and that with comparatively trifling deviation.† The time for putting the ram with the ewes will therefore be from the middle of October, to that of November. No preparation is necessary, except, for a few weeks previously, to place the ewes on somewhat better pasture than usual. Before the ram is admitted, the farmer should always fold and examine the ewes, first as to their possessing that form and appearance that are likely to perpetuat the breed which he is desirous to possess, and secondly, to ascertain whether they are in good health, the proof of which will be the whiteness and firmness of their teeth, the sweetness of their breath—the brightness of the eye and of the countenance, the degreee of fat which they carry, and the firmness with which the wool adheres to the pelt. Every inferior or diseased ewe should be separated from the rest, and prepared, as speedily as may be, for the butcher.

In consequence of the new system of breeding and management, the ram will be sufficiently matured at the same age as the ewe; but it will not, perhaps, be prudent to allow him so many ewes as would be placed with one of greater age. The number should be somewhat regulated by the apparent health and strength of the animal, and the pasture from which he comes.—Forty or fifty ewes may be allowed to the sheerling, and seventy or eighty to the older ram.

* See Quarterly Journal of Agriculture, Sept. 1836, p. 259. Low's Elements of Agriculture, p. 492, and Dickson's Practical Agriculture, vol. ii p. 639.

† M Tessier presented a valuable memoir to the Royal Academy of Science in Paris, containing his observations on the period of pregnancy of almost every domestic animal — Out of 912 ewes, the shortest period was 146 days, and the longest 161, being a difference of 15 days; but more than three parts of them yeaned between the 150th and 154th day after impregnation; bringing the average as nearly as possible to 152 days, or five calendar months, or twenty-one weeks and five days

Native Stock vs. Durham.

[*From the Yankee Farmer.*]

Mr. Editor—I observed in the Farmer of Jan. 5, an article upon the superior value of the Durham breed of cattle. It is there stated that a farmer can afford to give five hundred dollars for a full blood Durham bull, and the calculation is carried out to show how quickly, easily and certainly he will get his pay back.

I affirm that we have no need to go abroad for stock for our farms. The only secret is in managing well the stock that we have. Take the best Durham breed, or any other that can be produced, and let our farmers treat them as they have heretofore treated our native cattle, hogs and sheep, and in a few generations they will be as poor and mean. The whole art in having good stock of any kind, is to select, from year to year, the best for breeders.

The present goodness of our native stock, considering how it has been uniformly treated from year to year, by the owner, is ample proof of its real goodness. The only thing wanted is constant and proper selection and proper keeping, and our stock would soon be equal to any. As long as our farmers will continue to sell off cows that are worth one hundred dollars and keep those that are hardly worth five, we may never expect to see a fine breed of cattle. The farmers may import what breed they please, and pay as high prices as they please, it will be all the same thing in the end, until they learn to manage better. The rules for selecting for good stock are principally these—deep wide shoulders, wide and deep hips, short and straight back bones, round bodies and well ribbed back, short shin bones, short strong necks, small short heads, and small pointed noses. If these rules were observed from generation to generation, by our farmers, the meanest breed of cattle that were ever seen would soon become first rate. Just so with your hogs and sheep. A very large creature, of any kind, is not so profitable to the farmer, as a good, middling size. The main thing is shape. And no farmer should ever sell at any price, his best and finest shaped animals, if he intends to keep up a good and profitable kind. A gentleman told me lately that he began farming about twenty years ago. He then took a good deal of pains to find and purchase a superior kind of sheep. He could find none on an average better than his own, which were mean. He adopted the practice of selecting his best lambs every year, for stock. In a few years he had the first rate sheep. The same course will produce the same effects in every kind of animal.

Instead of paying five hundred dollars for a Durham bull, let any farmer lay out that sum in extra keeping and care of his present stock, and select his best calves every year for stock, at the end of five years he will be better off. I do not deny the notion of purchasing a superior quality of stock, when it can be done, at a fair reasonable price, but only the notion of running into such great extravagance of prices. A little care and patience will serve our farmers a much better purpose, and, in the end give them full as good and profitable a stock. PHILO.

Portland, January 8, 1839.

Animal Nutrition.

[*From the Genesee Farmer*]

Until within a very few years, little attention seems to have been paid to the subject of animal nutrition; the quantity or kind of food most suitable for this purpose was mostly overlooked, and if life was supported, no questions were asked as to the why and the wherefore. So long as the population of the old world remained few in number compared with the acres from which subsistence was to be drawn, there was indeed little use in inquiries of this kind; then, as now in the United States, or this continent generally, a supply of food of some kind was usually certain. Now and then years of famine in particular sections might occur;—for in those times, when the means of intercourse were so limited, the inhabitants of one country might be starving, while those at a distance of a few hundred miles were rioting in abundance; but they were soon forgotten in the succeeding plenty, and led to no valuable investigations as to the nature of food or nutrition. The population fared more nearly alike in former times than at present, so far as food was concerned; it was bulky and hearty, and if it produced disease, it was of a different kind from that which now assails the modern omniverous eater and drinker, and in all cases was decidedly the same. In these days, the differences in mankind made by rank or wealth, are scarcely more deeply marked than those observable between the diseases of the rich and the poor; a difference in the main to be attributed to the nature of their diet, and its effects on the animal system.

Among the inquiries into the effect of different kinds of food or animal nutrition, Dr. Stark, of Vienna, appears to have taken the lead; indeed he seems to have fallen a marter to his zeal in the cause of science, perishing, as he undoubtedly did, from the results of his long continued experiments on *himself*. By confining himself to food of a particular kind for a considerable space of time, he was able to ascertain its actual effect on the organs of digestion, and its value as a source of nourishment. Bread, meat and milk, each in its turn, for a considerable period, was his sole nutriment; and the result showed that these things, certainly among the most nutritive of substances, could not maintain the vigor of the body, or even life itself, but for a limited time. In this respect man differs from the majority of animals; his organization is such as to admit and even require a variety of food, while many animals are by a law of their natures confined to a particular kind of food, as flesh or vegetables.

The French physiologists, Magendie and his coadjutors, followed up the experiments of Stark, not on themselves, but on animals, and found they could not long survive on food, however nutritious in itself, unless they receive a large portion of that on which they naturally subsist. Thus a dog fed on white sugar and water alone, soon became emaciated, lost its appetite and sight and perished. Few substances can be more nutritive than sugar, but it lacked the power of properly distending the stomach, and exciting its digestive energies.—Dogs fed on pure wheat bread and water lived but little longer; and rabbits, which eat a variety of vegetables, such as clover, cabbage, barley, corn and carrots, were unable to live for any time confined to one of these. It was found that animals, when much emaciated and reduced by one kind of food, were not often restored by another, though they frequently partook of it with greediness—the tone of the stomach could not be regained.

To facilitate proper digestion of food by the animal or man, it is necessary that with the nutritive part, substances more bulky, or containing little nutritive power, should at the same time be taken as food. An experiment has been made in England on the feeding of horses, which demonstrates this fact most conclusively.—Some cavalry horses were selected, and while one part of them received sugar and water alone, the other part had a few pounds of cut straw added to their portion of sugar and drink. Those which received the sugar alone fell away rapidly, while those fed with the sugar and straw throve as perceptibly; and a repetition of the experiment on another set of animals, showed the same result. In man the rich and high seasoned food, the fine flour and the fat meat, are to the stomach what pure wheat or sugar would be to the stomach of the horse. There is much nutriment, but little that can facilitate digestion. A man swallows nourishment enough for half a dozen, but instead of its producing a good effect, his stomach becomes disordered, its functions debilitated, and in the midst of plenty he becomes dyspeptic, and incapable of enjoying any thing. The man who lives on common food, sound and sufficiently nutritious, is rarely troubled with the evils that press so heavily on him who, regardless of the law of nature, takes more nutriment and less substance than is consistent with a healthy tone of the digestive powers.

Perhaps the best estimate of the time required for the digestion of the various substances used as food by man, and their general effect on the animal organization, is given in the book of Dr. Beaumont, from experiments made on the living subject, and under circumstances more favorable to correctness than are known to have ever before existed. We give below a table of the results obtained by him, not as a mere matter of curiosity, but as furnishing information of the most valuable kind in connection with animal nutrition. The first column indicates the substances taken into the stomach; the last the time required for its digestion.

	hour.	min.
Boiled rice,	1	00
Sago, tapioca, barley and boiled milk,	2	15
Tripe and pigs' feet,	1	00
Fowls, beef's liver,	2	30
Hard eggs,	3	30
Soft eggs,	3	00
Custard,	2	45
Trout, boiled or fried,	1	30
Other fresh fish,	3	00
Beef, rare, roasted,	3	00
Beef, dry, roasted,	3	30
Salt beef with mustard,	2	30
Pickled pork,	4	30
Raw pork,	3	00
Mutton, fresh,	3	15
Veal,	4	00
Wheat bread, fresh baked,	3	30
Corn bread,	3	15
Sponge cake,	2	30
Succatash,	3	45
Apple dumpling,	3	00
Apples, sour and mellow,	2	00
Apples, sweet and mellow,	1	30
Parsnips, boiled,	2	30
Potatoes, boiled,	3	30
Potatoes, roasted,	2	30
Raw cabbage,	2	30
Raw, with vinegar,	2	00
Cabbage boiled,	4	30

Dr. Beaumont found that the envelop of the seeds in the apple and the skins of potatoes were scarcely acted upon by the gastric juice, and consequently indigestible. As a whole, it would seem that animal aliments are digested easier than vegetable ones; but his experiments show conclusively, that whatever the kind of food, the ultimate principle of nutrition, or the chyle, is the same in all cases.

Digestion is much facilitated by the particles of food being made fine when taken into the stomach, and the quantity of nutritive matter furnished is greater. Individuals, therefore, in whom the digestive powers are

weakened, find a benefit in thoroughly masticating or chewing their food. This principle is of great importance in the feeding or fattening of animals, and shows the necessity of grinding or cooking the materials given them, if we are anxious they should derive the full benefit of the nutritive matter contained in them.

The experiments of Dr. Beaumont further proved, that when food of great nutritive powers was taken into the stomach in large quantities, the functions of that organ were evidently clogged, and that usually, in eating, a larger quantity of nutritive matter was received than was beneficial. A certain quantity of solid food, or food of a bulky nature, he found to be essential to digestion with ease, and a proper separation of the nutritive principle. This agrees with the fact, that horses or cattle require cut straw or hay mixed with their grain, both to ensure mastication, and furnish the necessary bulk of solid matter in the stomach. It is a common saying with farmers, that an ox, when feeding on meal, must be furnished with a lock of hay to make him a cud. They require more than this, and the reason, from what has been said above, is perfectly obvious.

Capabilities of Soils—Vegetable Physiology.

[*From Prof. Jackson's 2d Annual Report of the Geology of the Public Lands of Maine and Massachusetts.*]

It is evident that plants are not endowed with creative powers, and consequently are unable to produce any new elementary substances; hence the various substances which enter into their composition, must be derived from the air, water or earth. All the saline and earthy matters which they contain, are readily traced to their origin in the soil; while the carbon, hydrogen, oxygen, and nitrogen that exist in them, are elements which they draw from air, water, and the animal and vegetable substances used as manures.

The atmosphere is composed chiefly of the two gases, nitrogen and oxygen, mixed together in aeriform solution, in the proportion of four-fifths nitrogen and one-fifth oxygen; besides which gases there is always a certain proportion of carbonic acid gas, amounting to $\frac{1}{10.000}$ part, and variable proportions of aqueous vapor.

From the carbonic acid gas of the atmosphere, plants derive a large share of their carbon, which is the basis of all vegetable matter. Some of it is also furnished by the fermentation of vegetable and animal substances, which decompose in the soil, and this gas is either decomposed by the leaves of vegetables, or is carried into their roots by aqueous solution and absorption. All fresh growing plants decompose the carbonic acid of the air, take up its carbon, and exhale oxygen gas, and this operation goes on more rapidly while the sun shines upon them. In darkness, plants give out carbonic acid, but the quantity is relatively small, when compared with that which they absorb during the day. So that if a plant is grown under a bell glass, containing air mixed with this gas, the carbonic acid is soon removed, and replaced by pure oxygen.

Thus vegetation is continually removing a substance deleterious to man and all animals, and replacing it by pure vital air—a gas absolutely necessary for their respiration. This beautiful law of nature should never be lost sight of by the farmer, nor should he ever forget the relation which the green woods and fields bear to the healthfulness of the country.

Seed will not germinate without the joint action of air, water, light* and heat. Without these essential conditions, the germ remains, as it were, asleep for an unknown length of time. Seeds taken from the tombs of ancient Thebes, in Egypt, where they had remained in a dry, dark and sequestered spot, for more than three thousand years, were found still to possess their vital properties, and when planted in a botanical garden in London, sprang forth to flourish in the present age.—How long a seed, thus immured in darkness, shut out from all the causes which would produce germination or decay, would remain alive, is wholly unknown; but from the known facts respecting spontaneous rotation of crops and of forest trees, it would seem that the seeds remain buried in the soil for enormous lengths of time, before the circumstances necessary for their putting forth arrive. Dead leaves of the forest shut out light, and preclude, in some measure, the influence of the atmosphere, while the sombre foliage hangs over the soil, and serves, by its shade, as an additional cause of preventing germination. Thus, I suppose, the seed, buried in the forests, remain dormant until the removal of the shade trees, or the burning of the leaves, gives free access to the causes requisite for germination and growth of the hidden plants; and we consequently perceive a new growth almost invariably follows the removal of the primeval forests. According to Decandole, plants exude from their rootlets certain substances, which have the property of eventually eradicating their own species, while they are not preventive of the growth of other plants; hence he accounts for natural rotation.† It is probable, also, that one kind of vegetables may exhaust their proper nutriment, and thus render the soil incapable of supporting their kind, while there are other principles left suitable for the support of different species. This subject is, however, the most obscure department of vegetable physiology, and one which demands the labor of modern chemists and botanists.—Thus much we know, that the conditions above stated are essential requisites to healthy vegetation, and that the soil must furnish certain substances not attainable alone from air and water. When we analyze a plant, we always find a certain quantity of silex, alumina, lime and potash, forming a large proportion of the ashes which is left on burning the plant. All these matters are contained in the soil, in greater or less proportions, and some of them are essential to the growth of the plants. The coating of wheat, rye and barley straw is silex, and gives the necessary strength and hardness to the stalk.

The analysis of the grain of wheat gives a large proportion of the carbonate and phosphate of lime, and we know that this grain only thrives upon a soil containing calcareous matter. It was long ago observed in Massachusetts, and is also seen in certain districts in Maine, that wheat straw grows very well, but the grain does not fill and present a plump and solid appearance, but looks wilted, and is not heavy. This was formerly supposed to be owing to the climate, but on more careful examination, it is found to arise from the want of lime in the soil. Many animal manures contain a little of this substance, and it accordingly appears, that where a farm is well manured, wheat will grow well upon it, but a large annual expenditure is required for the purpose. It is observed, that all the grain regions of the country have soils more or less calcareous, and we find, that, by adding lime to the soil, we may produce by art the material wanting; and it appears by analyses made in this country, and by the results of certain experiments which have been made in France, and repeated here, that a very minute proportion of lime is amply sufficient for the purpose. Thus one or two per cent of carbonate of lime will answer the purpose, and this small quantity costs so little, that any farmer can well afford to apply it to the soil. Indeed, I do not see how he can afford to do otherwise, since he will be a loser, and his more skilful neighbors will be enabled to supply the market, while he will not be able to recover his seed.

It is a great mistake to suppose, that wheat will grow in any soil; for I know that in many instances, the crop raised the past season, which has certainly been very propitious, did not equal in value the seed sown; and these instances all occurred where the soil was destitute of lime, and was not largely manured.

Unless you wish to waste your labor upon barren and unproductive fields, attend carefully to the nature of your soil, and supply those elements which are wanting, in order to render it fruitful.

When lime is moistened with water, it becomes hot, swells, and falls into a bulky white powder, called by chemists the hydrate of lime, it being composed of water combined with that substance in a solid state.—This powder, if the lime is of good quality, will amount to nearly three times as much as before it was slaked, so that one cask of lime will fill three casks with the hydrate, or water-slaked lime. If, on the other hand, the lime is exposed to the action of the air, it will attract carbonic acid gas, and become air-slaked, which operation re-converts it into its original chemical state. The hydrate also attracts carbonic acid from the air, and is likewise converted into the carbonate, which will weigh nearly twice as much as the quick-lime, from which it is made.

I mention these evident facts, in order to assure the farmer, that when he buys a cask of lime, it will make about three of the article which he uses as a manure, and consequently, that it is not so expensive as he might imagine, since it increases in bulk, and will cover a considerable surface. Moreover, by a skilful management the farmer may, by the use of lime, form a vast number of valuable composts, and may destroy, or not, as he pleases, the seeds and insects in his compost or barn manure. It also has the power of decomposing animal and vegetable substances, the extent of which operations, a skilful hand can regulate at will, and a great variety of valuable saline compounds, the most active of manures, may be formed. There are many cases, also, where the combining power of this substance can be taken advantage of, in the neutralization or removal of deleterious matters, and, by judicious management, those very principles may be converted into valuable manures.

It is a common practice among farmers, to make use of peat, pond mud, or muck, as they call it, and I have observed instances in which it was evident that the soil was greatly injured by its application. In one instance I observed, in Waterford, that a portion of the field on which this substance was placed, presented a dwarfish and sickly yellow crop of Indian corn, while that part of the field not treated by it, was covered with a most luxuriant and healthy growth of the same corn. The operation was tried experimentally, in order to ascertain the value of peat alone as manure.

If it had first been made into a compost, with animal manure and lime, it would have presented very different results. Lime alone on peat renders its acid properties inert, and then it answers pretty well as a manure. But if laid down in layers with barn-yard manure, night soil, dead fish, or any other animal matter, and then each layer strewed with lime, a most powerful fermentation will take place, and a vast quantity of ammonia will be disengaged, which combining with the ulmic acid of peat, will form ulmate of ammonia, a most powerful manure. Carbonate of ammonia, and many other salts, will also result, which convert the whole mass into the very richest kind of manure, forming what may be properly called a universal compost.

If the farmer is desirous of destroying the seeds and insects in barn-yard manure, let him heap it up in alternate layers, with fresh quick-lime, and the heat generated will effectually destroy them.* This operation produces a number of soluble salts, and therefore it should only be done where the manure is soon to be used, for the rain would remove them in solution.

If a soil is charged with sulphate of iron, it is best to use quick-lime in powder, sprinkled on the surface of the soil, for its action is the more rapid and powerful. Generally, however, it is proper to slake the lime with water, and then to expose it freely to the air, in case it is to be sown broad-cast, so that it may become carbonated, which renders it more permanent, it being less soluble in water.

In general, it may be stated, that about four casks of lime are required for each acre of land, and according to the experience of M. Puvis, this quantity, in many cases, was found amply sufficient. If the soil is loose and sandy, without any clay bottom near the surface, it is evident that annual renewals will be required, until the desirable quantity is obtained.

Marl may be used in the same manner as air-slaked lime, and it is found to possess similar properties. Sea-shells may be used when broken to pieces by the action of fire, or by frost, and great benefit is gained by such a dressing. Shells owe their fertilizing properties to the carbonate of lime, of which they are chiefly composed, but their compact texture requires to be broken down in the manner alluded to.

Burnt bones contain a small quantity of carbonate, mixed with a large proportion of the phosphate of lime, and may be advantageously used. Bones ground to powder, have also a very powerful and desirable influence, forming one of the most valuable top-dressings with which we are acquainted. The refuse bone black, from sugar refineries, is also extremely powerful, and is one of the warmest and strongest manures known. It is highly prized in France, and I have formerly mentioned the fact, that orders were even sent to this country for this article. It may be made into a compost with other matters, since it is too strong to be used alone.

Gypsum is said to operate well as a stimulant to vegetation, and acts powerfully where the soils are calcareous. In Pennsylvania, it is is sown broad-cast upon their limestone soils, and operates powerfully, favoring the growth of grain and grasses. In Maine, it is the general opinion of farmers, that this mineral does not succeed upon the sea-coast, while it answers a good purpose in the interior of the state. I am not yet prepared, however, to report upon the subject, since I have not been able to gather the requisite number of facts.

How should Manure be applied?

[*From the Yankee Farmer.*]

Mr. Editor—One of your correspondents has criticised with something of severity on a recommendation of the agricultural committee of Massachusetts to spread compost manure and harrow it in. On what ground Philo calls this an old error, we cannot easily imagine. Having read with some attention treatises on agriculture for nearly forty years, we remember no period when the question has not been in discussion and dispute among theorists, whether manure should be left near the surface, or buried deep under the soil. There has been the manifestations of great zeal and some asperity on the subject. The advocates of surface manuring have generally preferred the charge against their opponents for manurig the antipodes, and they themselves have been as confidently accused of manuring the atmosphere. Each theory has the support of some very respectable names, and the opposition of others of equal weight. Observation and experience should determine the course of the practical farmer. We hope very many will make fair experiments on the recommendations of the committee, notwithstanding what has been written in opposition to it; for we believe after repeated trials, that it is the most perfect cultivation ever practised in this country. Did Philo attend critically to the whole recommendation? Does it not as a whole, approach nearer to a part of his own theory than he has supposed? It is recommended, first to turn the soil carefully over, to such depth as may be indicated by the character of the land, and the plants we propose to place in it. The turf we turn under is never to be disturbed in the subsequent culture. Now we have at the foundation of the soil, such a fermenting mass as your correspondent desires, not perhaps so powerful, but as certain and enduring. A practical objection against turning under all the manure we apply to the land with the turf, is, there will not be action and energy enough in what we make surface soil in ploughing to produce a crop. We want the quick operation of manure that takes place near the surface. We think there may be philosophical objections of great weight against burying manure deep in the earth; we claim not the ability of discussing fully such objections, but beg leave to call the attention of Philo to some remarks of Dr. Jackson, which will at least convince him that all scientific men cannot assent to his doctrines.

"The loss of the saline matters of manures, by solution and infiltration," the Doctor remarks, "is vastly greater than is commonly supposed by farmers. The evaporation, to which so much loss is attributed, is but a drop in the bucket, in comparison with that of solution. Some maintain that manures never penetrate the earth beyond the depth of a few inches; but this is a great error. The most important ingredient, viz: the soluble salts, penetrate the earth to an enormous depth, and we find animal matters in the well waters of Boston, one hundred and fifty feet below the surface. I

* We think *light* not necessary, but prejudicial, in the process of germination.—*Cond.*

† This theory of Decandolle is not tenable.—*Cond.*

* Of very doubtful utility.—*Cond.*

know also of instances where deep well water, formerly free from saline and animal matter, became charged with them two years after the top soil had been cultivated and dressed with animal manures. Hence it is evident, that since all the fresh water of our wells infiltrates from the top soil, that the soluble salts, whether of animal, vegetable or mineral nature, will be dissolved and carried down by the action of water, and they are as I know, easily detected in the water at great depths. Hence the value of a clay substratum in our fields, where the soils are porous, and the facts coincide with the theory, as I have frequently had occasion to observe."

Philo speaks of the philosophy of nature in the fermentation and decomposition of manures; why should not practical men take rules for the application of manure from indications in nature? All the provision that is made in the order of Providence in the decay and consumption of one crop for the nourishment of another—all the droppings of animals and the defoliation of plants and trees, lodge on the surface of the earth. The order established in nature seems to contradict the idea of any immense loss in evaporation.—Apply manure in any manner, no doubt there will be some loss in it. If, in deep burying, we endeavor to retain the ascending gases to the latest possible period, we shall not at any time have enough of their influences to produce the most vigorous vegetation. If we leave the manure on or near the surface, some of it may grow inert by drying, or blow into neighboring fields; still it is only when placed near the surface, that the most direct and greatest effects are produced on plants.

OBSERVATOR.

"On Burying Manure Deep."

We were much gratified in reading the communication of Philo, in your last number, and have long been a believer in his philosophy of manure. On this subject, we have heretofore briefly given our views, and we ask your indulgence at this time, to permit us to say a word more, "in hopes it may be instrumental in producing some good, although compared with the famous contributions of our friend Ben Barleycorn, it may be thought of no great import." It must be obvious to all who till the soil, that even the salts or earthy particles of manure do not sink deep into the earth,—we have abundant evidence of this in the appearance of the soil, even where fields have been heavily manured. At a certain depth, the soil will exhibit its natural colour and texture, and give no indication, by its effects on crops, of having been impregnated with the solutions of animal or vegetable matter. The philosophy of this is, the earth acts as a strainer, and, as Philo says, "this is a wise provision of nature—that the most impure water is made pure by filtration through a few inches of light soil."

It is a fact well understood, that the gases generated by manure, whilst undergoing fermentation, always ascend, because they are lighter than atmospheric air, and unless the manure is buried sufficiently deep, they escape and are lost, or become a fruitful source of disease."

The influence of the sun and atmosphere have a tendency to prevent even the salts or earthy matter from sinking deep into the soil—the fibrous roots of every tribe of the vegetable kingdom are always on the alert, and are attracted to the depositories of their natural aliment, with the precision of the needle to the pole.

In this our own experience compels us to dissent from some of the views of the learned geologist of Maine, in his valuable communications to the agricultural commission of Massachusetts. [See quotation in the preceding article.]

Now it seems to us a more reasonable thing to believe, that the animal matter detected in wells of that depth, [150 feet,] was driven by the wind through the crevices in the platform, or the waters impregnated with these salts immediately round the well, found their way by some subterraneous passage, through the stoning near the surface. Were his theory correct, we should be very unwilling to take up our abode among some of the intelligent farmers near the city, who are in the habit of dressing their land very liberally with night soil, undivested of its noxious effluvia, by the Frenchman's process of converting it into poudrette. For our own comfort, we hope at least the doctor is mistaken; for all the water we make use of is drawn from a well located in our barn-yard; this well has supplied us with water for fifteen years, and we have never been able to detect any saline or soluble salts in it, but occasionally we detect *animal matter* in the shape of *rats*, which find their way there in the same manner that we imagine all *animal matter* must find its way into a well 150 feet deep. With the exception named we were highly gratified with the perusal of the doctor's communication; it contains a fund of valuable information that should be familiar to every farmer. We are, however, strong in the faith, that farmers in general lose ten times the manure by evaporation, that they do by infiltration.—And we think as a general rule, manure judiciously buried with the plough, is as secure to the farmer for future crops, as is his money when placed in the vaults of a solvent bank. C.

Mattakees, April, 1839.

Culture of Indian Corn.

[*From the Genesee Farmer.*]

GREAT YIELD.

Mr. TUCKER—As the time of year is near at hand, for planting *corn*, I propose giving you for publication, my experience in raising corn, and more particularly my success for the last year. I will first say that I think, in this vicinity, farmers have been in the habit of planting too much ground, or in other words, more than they have well tilled and manured. I had lost my whole crop, or nearly so, for two or three years previous to the last season, except some small patches, and in my garden. I have sometimes planted on ground of clay and muck, that would hold the water so long in the spring that the corn would get backward, and thereby get overtaken with the frost, while a little more than fit to roast. Two years ago I sent to the Rochester Seed Store and got a small quantity of the early Dutton corn. I planted about one-fourth of an acre, which gave me more sound corn than I had on three acres adjoining—same quality of land—but taking the whole together, it was still a losing business. I then resolved to take a different course, first, to plant on a different soil; second, to plant no more than I could make as rich as my garden. My garden is of a gravelly, dry soil, of course rich. In it I had every year planted some corn; sometimes near the first of April, and at other times quite late, but ever have failed to get good corn even in our poorest seasons. Adjoining the garden, the natural soil is the same, and I came to the conclusion that I could take some of it and make it produce as well as my garden. Therefore, last season I planted about an acre with the early Dutton, or Buel corn, and the result was one hundred and twelve bushels of shelled corn to the acre. This is a great yield for this country, and in fact is beyond any thing I have ever before seen. There was more sound corn than I had raised for a number of years before. The season was a favorable one, and aside from that I attribute my success to three things, viz: manuring high, planting thick, and a prolific kind of seed corn. The tilling was nothing but ordinary. In the fall of 1837, the ground was in timothy and clover, with a light sward, having been stocked about two years. I then ploughed it late in the fall. In the spring following I covered it over with common coarse manure from the barn-yard, which was composed of a large quantity of straw. My stock is principally sheep, and straw was thrown into the yard plentifully during the winter for bedding. In drawing it out a load was usually dropped in a place, so that after it was spread, it completely covered the ground to quite a thickness. About the middle of May the ground was ploughed very deep, and boys were sent ahead of the plough and raked all the manure into the previous furrow, so that it was completely covered. Some of my neighbors then said that they should rather have that coarse manure off from the ground than on it, for the good of the corn crop, and said it would do no good till the next crop, or until it should be decomposed. I will here remark, that from reason and experience, I must protest against leaving manure in the yard over summer, or even putting it into heaps to decay as some do to heat and drain off the strength all summer. On the contrary in most cases it is most as cheap to haul it into the field, as to heap it up in the yard. We get the use of it one year sooner, and have all the strength on the land where it should be instead of being washed into the streams of water. I think for corn and potatoes, that the benefit the first year will more than pay the expense of carting ordinary distance. To return to my subject, I next harrowed and furrowed my ground, or rather marked it very shallow, three feet apart. It was now the 17th of May, having been hindered a number of days by a heavy rain. I put three kernels in a hill, and sixteen to eighteen inches apart. It being rather cold and wet, the corn did not sprout quick as usual, and on examination I found that a small wire worm that was probably in the manure, had eaten into the chit of the corn, so that only a part of it was coming up. Although now as late as the 4th of June, I commenced planting over by putting in just as much seed as I did the first time, a hill between every two hills, which made them nearly join. As I had only seed enough left of the kind, to plant over 118 rods of the ground, the rest was planted over to beans. I will here state that the 118 rods was all the ground that was manured, and a cast made on an acre from that ratio. The rest was equally as good corn, but the ground not well stocked. When I hoed the first time, I concluded at the second hoeing to pull out some where it was the thickest, but I left them for some time, and forgot to tell my man to do it; therefore it all stood. I told him to hoe it twice more, but he did not hoe it but once, having for an excuse that the corn got so large, he could not, making only two hoeings. The stalks were 8 or 10 feet high, and a complete swamp to appearance.

Now some of my neighbors said it would be all stalks and no corn. On the night of the 2d of September, I think we had a severe frost which killed the stalks, but the corn was all ripe, the last planted as well as the first; making for the last planted just 13 weeks. It needed no sorting to grind, and handsomer corn I never saw. As to its being all stalks and no corn, the result showed. I am strong of the opinion that great improvements can be made in planting by distributing the seed more over the ground and by putting in more of it.

I fear I have wearied your patience about a small field of corn, and will close by saying that if any of the above is worth publishing you can do it, if not, throw it under the table. L. C.

Darien, Genesee Co., April 19th, 1839.

The new mode of drawing.

It would appear from the following Report of the proceedings of the London Royal Society, at one of their sittings in February, which we copy from the London Literary Gazette, that the invention called the daguerotype, which has been claimed by the French, is contested by Henry Fox Talbot, Esq. an Englishman.

A highly interesting paper by Henry Fox Talbot, Esq. was read. It detailed the author's discovery upwards of 5 years ago, of the new process of delineating objects. —From the first volume of the journal of the Royal Institution, it apppears that the late Mr. Wedgewood had some idea of the discovery. That ingenious gentleman in conjunction with Sir H. Davy, made many experiments, but they found all their endeavors to obtain success ineffectual, so much so that it discouraged them, and would have discouraged the author of the present memoir, had he not read the remarks of Sir H. Davy, contained in the journal alluded to, prior to the experiments which ultimately led to his invention. At first it consisted of laying the nitrate of silver on paper, and by means of the camera obscura and the solar ray acting on the paper, a perfect impression is obtained of any object in half a second; it was found, however, that the image thus obtained, by exposure to the light, faded, and after a while disappeared. By repeated experiments and the most devoted attention, Mr. Talbot, by what he calls sensitive paper (a great improvement upon that which he originally employed,) has overcome this great drawback; pictures he has had in his possession for years, are now as vivid as they were when first produced. The image obtained is white, but the ground is beautifully colored, and readily obtainable, either sky-blue, yellow, rose-color, or black; green is excluded; these variations of color, Mr. Talbot considers as so many chemical compounds. Objects the most minute are obtained—the delicate hairs on the leaves of plants, the most minute and tiny bivalve calyx, nay, even a shadow, the emblem of all that is most fleeting in this world, is fettered by the spell of the invention, and remains perfect and permanent long after it has been given back to the sunbeam which produced it; in short, to use Mr. Talbot's own words, the picture is "ended as soon as begun." The extent of the value of this invention cannot at present be anticipated; already the author has applied it with perfect success to the copying of sculpture, engravings, handwritings; and in every case so complete has been the image, that it has been mistaken for the original. The value of it even now to naturalists and others travelling abroad, many of whom are ignorant of drawing, must be immense. Lord Brougham was present, and paid profound attention to Mr. Talbot's paper.

An Act respecting School District Libraries.

Passed April 15, 1839.

The People of the State of New-York, represented in Senate and Assembly, do enact as follows:

§ 1. The trustees of every school district shall be trustees of the library of such district, and the property of all books therein, and of the case and other appurtenances thereof, shall be deemed to be vested in such trustees, so as to enable them to maintain any action in relation to the same. It shall be their duty to preserve such books and keep them in repair; and the expenses incurred for that purpose may be included in any tax list to be made out by them as trustees of a district, and added to any tax voted by a district meeting, and shall be collected and paid over in the same manner. The librarian of any district library shall be subject to the directions of the trustees thereof, in all matters relating to the preservation of the books and the appurtenances of the library, and may be removed from office by them for wilful disobedience of such directions, or for any wilful neglect of duty; and whenever they shall have reason to apprehend the loss of any such books, or their injury, or destruction by his misconduct, and whenever a vacancy shall exist in the office of librarian, the same shall be supplied by the trustees until the next annual meeting of the inhabitants of the district.

§ 2. Trustees of school districts shall be liable to their successors for any neglect or omission, in relation to the care and superintendence of district or joint libraries, by which any books therein are lost or injured, to the full amount of such loss or injury, in an action on the case, to be brought by such successors in their name of office.

§ 3. A set of general regulations respecting the preservation of school district libraries, the delivery of them by librarians and trustees to their successors in office, the use of them by the inhabitants of the district, the number of volumes to be taken by any one person at any one time or during any term, the periods of their return, the fines and penalties that may be imposed by the trustees of such libraries for not returning, losing or destroying any of the books therein, or for soiling, defacing or injuring them, may be framed by the superintendent of common schools, and printed copies thereof shall be furnished to each school district of the state, which regulations shall be obligatory upon all persons and officers having charge of such libraries, or using or possessing any of the books thereof. Such fines may be recovered in an action of debt, in the name of the trustees of any such library, of the person on whom they are imposed, except such person be a minor; in which case they may be recovered of the parent or guardian of such minor, unless notice in writing shall be given by such parent or guardian to the trustees of such library, that they will not be responsible for any books delivered such minor. And persons with whom minors reside shall be liable in the same manner, and to the same extent, in cases where the parent of such minor does not reside in the district.

§ 4. Any person conceiving himself aggrieved by any act or decision of any trustees of school districts concerning district school libraries or the books therein, or the use of such books, or of any librarian, or of any district meeting in relation to the school library, may appeal to the superintendent of common schools, in the

same manner as provided by law in relation to common schools, and his decisions thereon shall be final.

§ 5. The legal voters in any two or more adjoining districts may in such cases as shall be approved by the superintendent of common schools, unite their library moneys and funds as they shall be received or collected, and purchase a joint library for the use of the inhabitants of such districts, which shall be selected by the trustees thereof, or by such person as they shall designate, and shall be under the charge of a librarian to be appointed by them; and the foregoing provisions of this act shall be applicable to the said joint libraries, except that the property in them shall be deemed to be vested in all the trustees for the time being of the districts so united. And in case any such district shall desire to divide such library, such division shall be made by the trustees of the two districts whose libraries are so united: and in case they cannot agree, then such division shall be made by three disinterested persons, to be appointed by the superintendent of common schools.

§ 6. The moneys directed to be distributed to common schools by the fourth section of chapter two hundred and thirty-seven of the acts of 1838, shall be applied to the purchase of books for a district library for the term of five years; and the said moneys shall be distributed to the school district in the same manner and proportions as the public school money, and upon the like terms and conditions in all respects. And if by reason of non-compliance with such conditions, any library money shall be withheld, from any school district, the same may be distributed among other districts complying with such conditions, or may be retained and paid subsequently to the district from which the same was withheld, as shall be directed by the superintendent of common schools, according to the circumstances of the case.

§ 7. The superintendent of common schools, whenever requested by the trustees of a school district under the directions of the legal voters of such district, may select a library for their use, and cause the same to be delivered to the clerk of the county in which such district is situated, at its expense. He shall transmit a sufficient number of copies of this act, to supply each school district in the state, with forms and instructions for its execution, to the clerks of the respective counties, who shall forward the number directed to each school district in his county to the clerk thereof.

State of New-York, Secretary's Office.—This act having been approved and signed by the governor on the 15th day of April, 1839, I do hereby certify that the same became a law on that day.

JOHN C. SPENCER, *Secretary of State.*

Insectivorous Birds.

[*From the New-England Farmer.*]

Mr. FESSENDEN.–These are to the farmer and gardener of great value. They were designed by the Creator to check the too great increase of insects; and no farmer ought to suffer them to be wantonly destroyed on his premises. The number of insects destroyed by the robin, swallow, sparrow, mock-bird, and other small birds, is astonishing. One little family will destroy several hundreds in a single day. Some little time since, a pair of these small birds built a nest on a lilac, which grew close to one of my windows. In the time of incubation, there was a long and severe storm and a strong wind. The eggs were in danger of being thrown overboard by the writhing of the bush. Conscious of this, the female kept on the nest to prevent any accident which might follow on her leaving it, to collect food. Her mate, like a good provider, was busily engaged through the day in collecting food (insects) which he carried to his companion, and she received it of him with apparent affection. This circumstance excited particular attention; and of course this little society was closely observed. In a short time the eggs hatched; but from the roughness of the weather, or tenderness of the brood, the female chose not to leave the young. During this time, the male with surprising industry, brought small insects, in the larva state, to the nest, but was not suffered to feed the nestlings. The female received the food, and divided it among her little charge. When the young gained sufficient strength, the male was permitted to feed them; and from this time, both parents were mutually and incessantly, (by day) employed in collecting small insects from every quarter; and, on a moderate calculation, to the number of about 700 in a day.

One great cause of the increase of many insects, so destructive to vegetation is the decrease of those little friends to the agriculturist. Should a few of them innocently trespass on the property of the farmer to the amount of a few cents, let him remember, that he is greatly indebted to them for services rendered; and not wage a war of extermination.

They are not merely useful in destroying insects—for they call the farmer and the gardener to their business—cause the groves to resound with music, and usher in the morning with melodious praise.

R. GREEN.

Mansfield, March 27, 1838.

Cure for Hydrophobia.

[*From the Liverpool Mercury, July* 2.]

As the hydrophobia season has set in, we comply with the request of a correspondent, by giving insertion to the following. What we happen to know of the extraordinary property of the chloride of lime induces us to put great faith in its properties in the cure of the wound inflicted by dogs, or any other means.

We are indebted to M. Coster, a French physician, for the following valuable discovery, as a preventive to hydrophobia. Take two table spoonfuls of fresh chloride of lime in powder, mix it with half a pint of water, and with this wash keep the wound constantly bathed, and frequently renewed. The chlorine gas possesses the power of decomposing this tremendous poison, and renders mild and harmless that venom against whose resistless attack the artillery of medical science has been so long directed in vain. It is necessary to add that this wash should be applied as soon as possible after the infliction of the bite. Another plan which has been extensively tried at Breslau and Zurich, and many other parts of the continent, consists not merely in cutting out the bitten part, (mere incision has been found too often unavailing,) but in combining with the incision some effectual means for keeping open the wound and maintaining it in a state of suppuration during a period of at least six weeks. Other curative means, as the exhibition of mercury, balladonna or lyetoe, were also employed in the cases; but upon these, it is thought, little reliance can be placed. The following are the results of this treatment:—From 1810 to 1824, the number of persons admitted into the Breslau, was 184, of whom two only died of hydrophobia; from 1783 to 1824 inclusive, there were admitted into the hospital at Zurich 233 persons, bitten by different animals, (182 by dogs,) of whom only four died—two on the second day of admission, and in whom the disease had probably become developed before they were submitted to the treatment, and the other two were bitten in parts (inside of the cheek and eyelid,) where the prescribed means could not be employed with the requisite exactness.

Literary Statistics.

[*From the American Almanac.*]

The number of new works which appeared in the United States, in 1834 and 1835, amounted to 1,013, forming 1,300 volumes, and the cost of which may be estimated at $1,220,000. In 1836, the number was considerably increased, and the cost of the books published in that year cannot be computed at less than $1,500,000. Boston, New-York, Philadelphia and Hartford, furnished 19-20ths of the total amount.

Another statement for the years 1833, 1834 and 1835, is as follows:—Originals 1,030, reprints 854; total 1,884; —number of volumes printed, (1,000 for each edition,) 1,884,000.

In most cases the editions of one and the same work are larger and more frequent in the United States than in any other country. Many reprinted English works have here passed through three or four editions, while the publishers of the original in England have but one. In one instance, the sale of a book in America amounted to 100,000 copies, whereas in England only four editions of 1,000 copies each, were disposed of.

The amount of literary productions in America has more than doubled during the last ten years. The sale of five bookselling establishments amounted, in 1836, to $1,350,000. A single publisher paid, in the five years preceding 1834, $135,000 for copyrights, out of which $30,000 were for two works only. Carey, Lea & Blanchard paid last year $30,000 to American writers; and Harper & Brothers have paid about the same sum for several years past.

The following statement will show the relative proportion of native and imported literary productions, in 1834:

	Native.	*Imported.*
Education,	73	9
Divinity,	37	18
Novels and Tales,	19	95
History and Biography,	19	17
Jurisprudence,	20	3
Poetry,	8	3
Travels,	8	10
Fine Arts,	8	0
Miscellaneous Works,	59	43

Thus it appears in American literature the scientific and practically useful predominate, and that works of imagination are chiefly derived from foreign sources. The school-books are almost all written or compiled in the United States; and some idea of the extensive business done in them may be formed from the circumstance, that, of some of the most popular compilations in geography, from 100,000 to 300,000 copies have been sold in ten years; so that, in many instances, works of this kind produce a permanent income, as well to the author as the publisher. During the last five years, the number of American orignal works, in proportion to reprints, has nearly doubled.

The Pickman Farm.

The famous Pickman farm, in Salem, the best in the county, is lined round the borders of the fields, with engrafted apple trees. These trees are very thrifty, deriving most of their nourishment from the ground under the walls, which keep the soil loose, warm and moist, and preserve the roots of the trees from external injury. The trees in this situation are an ornament to the farm, while they are no hindrance to the farmer in cultivating his field, nor injury to the crops, by withdrawing nourishment, like those in the interior of the field. Yet those trees round the field are believed to yield a greater profit than the annual crop within, with all the labor necessarily bestowed upon it—and the annual sales of the apples and fruit on this farm are said to be enough to purchase a farm of moderate dimensions in the interior of the state.—*Newburyport, Mass. Herald.*

New Motive Power.

The Worcestershire Chronicle says—"We have been favored by a correspondent with the following account of an invention which, if what is said of it be correct, promises to make some stir in the world.

"'Her Majesty's letters patent have been granted to Mr. Byron l'Anson Bromwick, of Clifton-on-Teme, in this country, for an improved method of propelling all kinds of machinery, both stationary and locomotive.—The power is of equal magnitude to that of steam; it can be obtained at one-sixteenth part of the cost of that power, without the incumbrance of a boiler and its ponderous and objectionable appendages;—consequently carriages constructed almost as light and elegant as those now drawn by horses, can be propelled by this power, along the common roads or rail-ways, at any speed consistent with safety. As a motive power applied to ships and boats, it will be invaluable, there being do danger from explosion, nor any annoyance from smoke, steam, or noise; and the space now devoted to the boiler, fuel, &c. will be at liberty to be more profitably employed. The invention will be submitted to the ordeal of public opinion, as soon as the patent rights for France, Belgium and Holland have been disposed of."

Young Men's Department.

Self-Culture.

BY W. E. CHANNING, D.D.

We were so highly pleased with the perusal of the following lecture upon Self-Culture, by the Rev. Dr. Channing, that we asked permission of the Executive Committee of the Franklin Lectures, Boston, to whom the copy-right belonged, to publish it in the Cultivator. Our readers will no doubt unite with us in the expression of thanks to the committee, for their cheerful compliance with our request. The lecture will occupy a portion of two or three of our numbers.

ADDRESS.

MY RESPECTED FRIENDS—By the invitation of the committee of arrangements for the Franklin lectures, I now appear before you to offer some remarks introductory to this course. My principal inducement for so doing, is my deep interest in those of my fellow-citizens for whom these lectures are principally designed. I was informed, that they were to be attended chiefly by those, who are occupied by manual labor; and, hearing this, I did not feel myself at liberty to decline the service, to which I had been invited. I wished by compliance to express my sympathy with this large portion of my race. I wished to express my sense of obligation to those, from whose industry and skill I derive almost all the comforts of life. I wished still more to express my joy in the efforts they are making for their own improvement, and my firm faith in their success. These motives will give a particular character and bearing to some of my remarks. I shall speak occasionally as among those who live by the labor of their hands. But I shall not speak as one separated from them. I belong rightfully to the great fraternity of working-men. Happily in this community we all are born and bred to work; and this honorable mark, set on us all, should bind together the various portions of the community.

I have expressed my strong interest in the mass of the people; and this is founded, not on their usefulness to the community, so much as on what they are in themselves. Their condition is indeed obscure; but their importance is not on this account a whit the less. The multitude of men cannot from the nature of the case be distinguished; for the very idea of distinction is, that a man stands out from the multitude. They make little noise and draw little notice in their narrow spheres of action; but still they have their full proportion of personal worth and even of greatness. Indeed every man, in every condition, is great. It is only our own diseased sight which makes him little. A man is great as a man, be he where or what he may. The grandeur of his nature turns to insignificance all outward distinctions. His powers of intellect, of conscience, of love, of knowing God, of perceiving the beautiful, of acting on his own mind, on outward nature, and on his fellow-creatures, these are glorious prerogatives. Through the vulgar error of undervaluing what is common, we are apt indeed to pass these by as of little worth. But as in the outward creation, so in the soul, the common is the most precious. Science and art may invent splendid modes of illuminating the apartment of the opulent; but these are all poor and worthless, compared with the common light which the sun sends into all our windows, which he pours freely, impartially over hill and valley, which kindles daily the eastern and western sky; and so the common lights of reason, and conscience, and love are of more worth and dignity than the rare endowments which give celebrity to a few. Let us not disparage that nature which is common to all men; for no thought can measure its grandeur. It is the image of God, the image even of his infinity, for no limits can be set to its unfolding. He who possesses the divine powers of the soul is a great being, be his place what it may. You may clothe him with rags, may immure him in a dungeon, may chain him to slavish tasks. But he is still great. You may shut him out of your houses, but God opens to him heavenly mansions. He makes no show indeed in the streets of a splendid city; but a clear thought, a pure affection, a resolute act of a vir-

tuous will, have a dignity of quite another kind and far higher than accumulations of brick, and granite, and plaster, and stucco, however cunningly put together, or though stretching far beyond our sight. Nor is this all. If we pass over this grandeur of our common nature, and turn our thoughts to that comparative greatness, which draws chief attention, and which consists in the decided superiority of the individual to the general standard of power and character, we shall find this as free and frequent a growth among the obscure and unnoticed as in more conspicuous walks of life. The truly great are to be found every where, nor is it easy to say, in what condition they spring up most plentifully. Real greatness has nothing to do with a man's sphere. It does not lie in the magnitude of his outward agency, in the extent of the effects which he produces. The greatest men may do comparatively little abroad. Perhaps the greatest in our city at this moment are buried in obscurity. Grandeur of character lies wholly in force of soul, that is, in the force of thought, moral principle and love, and this may be found in the humblest condition of life. A man brought up to an obscure trade, and hemmed in by the wants of a growing family, may, in his narrow sphere, perceive more clearly, discriminate more keenly, weigh evidence more wisely, seize on the right means more decisively, and have more presence of mind in difficulty, than another who has accumulated vast stores of knowledge by laborious study; and he has more of intellectual greatness. Many a man, who has gone but a few miles from home, understands human nature better, detects motives and weighs character more sagaciously, than another, who has travelled over the known world, and made a name by his reports of different countries. It is the force of thought which measures intellectual, and so it is force of principle which measures moral greatness, that highest of human endowments, that brightest manifestation of the Divinity. The greatest man is he who chooses the right with invincible resolution, who resists the sorest temptations from within and without, who bears the heaviest burdens cheerfully, who is calmest in storms and most fearless under menace and frowns, whose reliance on truth, on virtue, on God is most unfaltering; and is this a greatness, which is apt to make a show, or which is most likely to abound in conspicuous station? The solemn conflicts of reason with passion—the victories of moral and religious principle over urgent and almost irresistible solicitations to self-indulgence—the hardest sacrifices of duty, those of deep-seated affection and of the heart's fondest hopes—the consolations, hopes, joys, and peace of disappointed, persecuted, scorned, deserted virtue; these are of course unseen; so that the true greatness of human life is almost wholly out of sight. Perhaps in our presence, the most heroic deed on earth is done in some silent spirit, the loftiest purpose cherished, the most generous sacrifice made, and we do not suspect it. I believe this greatness to be most common among the multitude, whose names are never heard. Among common people will be found more of hardship borne manfully, more of unvarnished truth, more of religious trust, more of that generosity which gives what the giver needs himself, and more of a wise estimate of life and death, than among the more prosperous.—And even in regard to influence over other beings, which is thought the peculiar prerogative of distinguished station, I believe, that the difference between the conspicuous and the obscure does not amount to much. Influence is to be measured, not by the extent of surface it covers, but by its *kind*. A man may spread his mind, his feelings and opinions through a great extent; but if his mind be a low one, he manifests no greatness. A wretched artist may fill a city with daubs, and by a false showy style achieve a reputation; but the man of genius, who leaves behind him one grand picture, in which immortal beauty is embodied, and which is silently to spread a true taste in his art, exerts an incomparably higher influence.—Now the noblest influence on earth is that exerted on character; and he, who puts forth this, does a great work, no matter how narrow or obscure his sphere. The father and mother of an unnoticed family, who, in their seclusion, awaken the mind of one child to the idea and love of perfect goodness, who awaken in him a strength of will to repel all temptation, and who send him out prepared to profit by the conflicts of life, surpass in influence a Napoleon breaking the world to his sway. And not only is their work higher in kind; who knows but that they are doing a greater work even as to extent or surface than the conqueror? Who knows, but that the being, whom they inspire with holy and disinterested principles, may communicate himself to others; and that by a spreading agency, of which they were the silent origin, improvements may spread through a nation, through the world? In these remarks you will see why I feel and express a deep interest in the obscure, in the mass of men. The distinctions of society vanish before the light of these truths. I attach myself to the multitude, not because they are voters and have political power, but because they are men, and have within their reach the most glorious prizes of humanity.

In this country, the mass of the people are distinguished by possessing means of improvement, of self-culture, possessed no where else. To incite them to the use of these, is to render them the best service they can receive. Accordingly I have chosen for the subject of this lecture, *Self-culture*, or the care which every man owes to himself, to the unfolding and perfecting of his nature. I consider this topic as particularly appropriate to the introduction of a course of lectures, in consequence of a common disposition to regard these and other like means of instruction, as able of themselves to carry forward the hearer. Lectures have their use.—They stir up many, who, but for such outward appeals, might have slumbered to the end of life. But let it be remembered, that little is to be gained simply by coming to this place once a week, and giving up the mind for an hour to be wrought upon by a teacher. Unless we are roused to act upon ourselves, unless we engage in the work of self-improvement, unless we purpose strenuously to form and elevate our own minds, unless what we hear is made a part of ourselves by conscientious reflection, very little permanent good is received.

Self-culture, I am aware, is a topic too extensive for a single discourse, and I shall be able to present but a few views which seem to me most important. My aim will be, to give first the idea of self-culture, next its means, and then to consider some objections to the leading views which I am now to lay before you.

Before entering on the discussion, let me offer one remark. Self-culture is something possible. It is not a dream. It has foundations in our nature. Without this conviction, the speaker will but declaim, and the hearer listen without profit. There are two powers of the human soul which make self-culture possible, the self-searching and the self-forming power. We have first the faculty of turning the mind on itself; of recalling its past, and watching its present operations; of learning its various capacities and susceptibilities, what it can do and bear, what it can enjoy and suffer; and of thus learning in general what our nature is, and what it was made for. It is worthy of observation, that we are able to discern not only what we already are, but what we may become, to see in ourselves germs and promises of a growth to which no bounds can be set, to dart beyond what we have actually gained to the idea of perfection as the end of our being. It is by this self-comprehending power that we are distinguished from the brutes, which give no signs of looking into themselves. Without this there could be no self-culture, for we should not know the work to be done; and one reason why self-culture is so little proposed is, that so few penetrate into their own nature. To most men, their own spirits are shadowy, unreal, compared with what is outward. When they happen to cast a glance inward, they see there only a dark, vague chaos. They distinguish, perhaps, some violent passion, which had driven them to injurious excess, but their highest powers hardly attract a thought; and thus multitudes live and die as truly strangers to themselves, as to countries, of which they have heard the name, but which human foot has never trodden.

But self culture is possible, not only because we can enter into and search ourselves. We have a still nobler power, that of acting on, determining and forming ourselves. This is a fearful as well as glorious endowment, for it is the ground of human responsibility.—We have the power not only of tracing our powers, but of guiding and impelling them, not only of watching our passions, but of controlling them, not only of seeing our faculties grow, but of applying to them means and influences to aid their growth. We can stay or change the current of thought. We can concentrate the intellect on objects which we wish to comprehend.—We can fix our eyes on perfection and make almost every thing speed us towards it. This is indeed a noble prerogative of our nature. Possessing this, it matters little what or where we are now, for we can conquer a better lot, and even be happier for starting from the lowest point. Of all the discoveries which men need to make, the most important at the present moment, is that of the self-forming power treasured up in themselves. They little suspect its extent, as little as the savage apprehends the energy which the mind is created to exert on the material world. It transcends in importance all our power over outward nature. There is more of divinity in it, than in the force which impels the outward universe; and yet how little we comprehend it! How it slumbers in most men unsuspected, unused! This makes self-culture possible, and binds it on us as a solemn duty.

I. I am first to unfold the idea of self-culture; and this, in its most general form, may easily be seized. To cultivate any thing, be it a plant, an animal, a mind, is to make grow. Growth, expansion is the end. Nothing admits culture, but that which has a principle of life, capable of being expanded. He, therefore, who does what he can to unfold all his powers and capacities, especially his nobler ones, so as to become a well proportioned, vigorous, excellent, happy being, practises self-culture.

This culture of course has various branches corresponding to the different capacities of human nature; but though various, they are intimately united and make progress together. The soul, which our philosophy divides into various capacities, is still one essence, one life; and it exerts at the same moment, and blends in the same act its various energies of thought, feeling and volition. Accordingly, in a wise self-culture, all the principles of our nature grow at once by joint harmonious action, just as all parts of the plant are unfolded together. When therefore you hear of different branches of self-improvement, you will not think of them as distinct processes going on independently on each other, and requiring each its own separate means. Still a distinct consideration of these is needed to a full comprehension of the subject, and these I shall proceed to unfold.

First, self-culture is Moral, a branch of singular importance. When a man looks into himself he discovers two distinct orders or kinds of principles, which it behooves him especially to comprehend. He discovers desires, appetites, passions which terminate in himself, which crave and seek his own interest, gratification, distinction; and he discovers another principle, an antagonist to these, which is impartial, disinterested, universal, enjoining on him a regard to the rights and happiness of other beings, and laying on him obligations which *must* be discharged, cost what they may, or however they may clash with his particular pleasure or gain. No man, however narrowed to his own interest, however hardened by selfishness, can deny, that there springs up within him a great idea in opposition to interest, the idea of duty, that an inward voice calls him more or less distinctly to revere and exercise impartial justice, and universal good will. This disinterested principle in human nature we call sometimes reason, sometimes conscience, sometimes the moral sense or faculty. But, be its name what it may, it is a real principle in each of us, and it is the supreme power within us, to be cultivated above all others, for on its culture the right development of all others depends. The passions indeed may be stronger than the conscience, may lift up a louder voice; but their clamour differs wholly from the tone of command in which the conscience speaks.—They are not clothed with its authority, its binding power. In their very triumphs they are rebuked by the moral principle, and often cower before its still, deep, menacing voice. No part of self-knowledge is more important, than to discern clearly these two great principles, the self-seeking and the disinterested; and the most important part of self-culture is to depress the former, and to exalt the latter, or to enthrone the sense of duty within us. There are no limits to the growth of this moral force in man, if he will cherish it faithfully. There have been men, whom no power in the universe could turn from the right, by whom death in its most dreadful forms has been less dreaded, than transgression of the inward law of universal justice and love.

In the next place, self-culture is Religious. When we look into ourselves we discover powers, which link us with this outward, visible, finite, ever changing world. We have sight and other senses to discern, and limbs and various faculties to secure and appropriate the material creation. And we have too a power, which cannot stop at what we see and handle, at what exists within the bounds of space and time, which seeks for the infinite, uncreated cause, which cannot rest till it ascend to the eternal, all-comprehending mind. This we call the religious principle, and its grandeur cannot be exaggerated by human language; for it marks out a being destined for higher communion than with the visible universe. To develop this, is eminently to educate ourselves. The true idea of God, unfolded clearly and livingly within us, and moving us to adore and obey him, and to aspire after likeness to him, is the noblest growth in human, and I may add, in celestial natures. The religious principle, and the moral, are intimately connected, and grow together. The former is indeed the perfection and highest manifestation of the latter. They are both disinterested. It is the essence of true religion to recognise and adore in God the attributes of impartial justice and universal love, and to hear him commanding us in the conscience to become what we adore.

Again. Self-culture is Intellectual. We cannot look into ourselves without discovering the intellectual principle, the power which thinks, reasons, and judges, the power of seeking and acquiring truth This indeed we are in no danger of overlooking. The intellect being the great instrument by which men compass their wishes, it draws more attention than any of our other powers. When we speak to men of improving themselves, the first thought which occurs to them is, that they must cultivate the understanding, and get knowledge and skill. By education, men mean almost exclusively intellectual training. For this, schools and colleges are instituted, and to this the moral and religious discipline of the young is sacrificed. Now I reverence, as much as any man, the intellect; but let us never exalt it above the moral principle. With this it is most intimately connected. In this its culture is founded, and to exalt this is its highest aim. Whoever desires that his intellect may grow up to soundness, to healthy vigour, must begin with moral discipline. Reading and study are not enough to perfect the power of thought. One thing above all is needful, and that is, the disinterestedness which is the very soul of virtue. To gain truth, which is the great object of the understanding, I must seek it disinterestedly. Here is the first and grand condition of intellectual progress. I must choose to receive the truth, no matter how it bears on myself. I must follow it, no matter where it leads, what interests it opposes, to what persecution or loss it lays me open, from what party it severs me, or to what party it allies. Without this fairness of mind, which is only another phrase for disinterested love of truth, great native powers of understanding are perverted and lead astray; genius runs wild; "the light within us becomes darkness." The subtlest reasoners, for want of this, cheat themselves as well as others, and become entangled in the web of their own sophistry. It is a fact well known in the history of science and philosophy, that men, gifted by nature with singular intelligence, have broached the grossest errors, and even sought to undermine the grand primitive truths on which human virtue, dignity and hope depend. And on the other hand, I have known instances of men of naturally moderate powers of mind, who by a disinterested love of truth and their fellow creatures, have gradually risen to no small force and enlargement of thought. Some of the most useful teachers in the pulpit and in schools, have owed their power of enlightening others not so much to any natural

superiority, as to the simplicity, impartiality and disinterestedness of their minds, to their readiness to live and die for the truth. A man who rises above himself, looks from an eminence on nature and providence, on society and life. Thought expands as by a natural elasticity, when the pressure of selfishness is removed. The moral and religious principles of the soul, generously cultivated, fertilize the intellect. Duty, faithfully performed, opens the mind to truth, both being of one family, alike immutable, universal and everlasting.

I have enlarged on this subject, because the connexion between moral and intellectual culture is often overlooked, and because the former is often sacrificed to the latter. The exaltation of talent as it is called, above virtue and religion, is the curse of the age. Education is now chiefly a stimulus to learning, and thus men acquire power without the principles which alone make it a good. Talent is worshipped; but, if divorced from rectitude, it will prove more of a demon than a god.

Intellectual culture consists, not chiefly, as many are apt to think, in accumulating information, though this is important, but in building up a force of thought which may be turned at will on any subjects, on which we are called to pass judgment. This force is manifested in the concentration of the attention, in accurate penetrating observation, in reducing complex subjects to their elements, in diving beneath the effect to the cause, in detecting the more subtle differences and resemblances of things, in reading the future in the present, and especially in rising from particular facts to general laws or universal truths. This last exertion of the intellect, its rising to broad views and great principles, constitutes what is called the philosophical mind, and is especially worthy of culture. What it means, your own observation must have taught you. You must have taken note of two classes of men, the one always employed on details, on particular facts, and the other using these facts, as foundations of higher, wider truths. The latter are philosophers. For example, men had for ages seen pieces of wood, stones, metals falling to the ground. Newton seized on these particular facts, and rose to the idea, that all matter tends, or is attracted, towards all matter, and then defined the law according to which this attraction or force acts at different distances, thus giving us a grand principle which, we have reason to think, extends to and controls the whole outward creation. One man reads a history and can tell its events, and there stops. Another combines these events, brings them under one view, and learns the great causes which are at work on this or another nation, and what are its great tendencies whether to freedom or despotism, to one or another form of civilization. So one man talks continually about the particular actions of this or another neighbor; whilst another looks beyond the acts to the inward principle from which they spring, and gathers from them larger views of human nature. In a word, one man sees all things apart and in fragments, whilst another strives to discover the harmony, connexion, unity of all. One of the great evils of society is, that men occupied perpetually with petty details, want general truths, want broad and fixed principles. Hence many, not wicked, are unstable, habitually inconsistent, as if they were overgrown children rather than men. To build up that strength of mind, which apprehends and cleaves to great universal truths, is the highest intellectual self-culture; and here I wish you to observe how entirely this culture agrees with that of the moral and the religious principles of our nature, of which I have previously spoken. In each of these, the improvement of the soul consists in raising it above what is narrow, particular, individual, selfish, to the universal and unconfined. To improve a man, is to liberalize, enlarge him in thought, feeling and purpose. Narrowness of intellect and heart, this is the degradation from which all culture aims to rescue the human being.

Again. Self-culture is Social, or one of its great offices is to unfold and purify the affections, which spring up instinctively in the human breast, which bind together husband and wife, parent and child, brother and sister; which bind a man to friends and neighbors, to his country, and to the suffering who fall under his eye, wherever they belong. The culture of these is an important part of our work, and it consists in converting them from instincts into principles, from natural into spiritual attachments, in giving them a rational, moral, and holy character. For example, our affection for our children is at first instinctive; and if it continue such, it rises little above the brute's attachment to its young. But when a parent infuses into his natural love for his offspring moral and religious principle, when he comes to regard his child as an intelligent, spiritual, immortal being, and honors him as such, and desires first of all to make him disinterested, noble, a worthy child of God and the friend of his race, then the instinct rises into a generous and holy sentiment. It resembles God's paternal love for his spiritual family. A like purity and dignity we must aim to give to all our affections.

Again. Self-culture is practical, or it proposes as one of its chief ends to fit us for action, to make us efficient in whatever we undertake, to train us to firmness of purpose and to fruitfulness of resource in common life, and especially in emergencies, in times of difficulty, danger and trial. But passing over this and other topics for which I have no time, I shall confine myself to two branches of self-culture which have been almost wholly overlooked in the education of the people, and which ought not to be so slighted.

In looking at our nature, we discover, among its admirable endowments, the sense or perception of Beauty. We see the germ of this in every human being, and there is no power which admits greater cultivation; and why should it not be cherished in all? It deserves remark, that the provision for this principle is infinite in the universe. There is but a very minute portion of the creation, which we can turn into food and clothes, or gratification for the body; but the whole creation may be used to minister to the sense of beauty. Beauty is an all-pervading presence. It unfolds in the numberless flowers of the spring. It waves in the branches of the trees and the green blades of grass. It haunts the depths of the earth and sea, and gleams out in the hues of the shell and the precious stone. And not only these minute objects, but the ocean, the mountains, the clouds, the heavens, the stars, the rising and setting sun, all overflow with beauty. The universe is its temple; and those men, who are alive to it cannot lift their eyes without feeling themselves encompassed with it on every side. Now this beauty is so precious, the enjoyments it gives are so refined and pure, so congenial with our tenderest and noble feelings, and so akin to worship, that it is painful to think of the multitude of men as living in the midst of it, and living almost as blind to it, as if, instead of this fair earth and glorious sky, they were tenants of a dungeon. An infinite joy is lost to the world by the want of culture of this spiritual endowment. Suppose that I were to visit a cottage, and to see its walls lined with the choicest pictures of Raphael, and every spare nook filled with statues of the most exquisite workmanship, and that I were to learn, that neither man, woman nor child ever cast an eye at these miracles of art, how should I feel their privation; how should I want to open their eyes, and to help them to comprehend and feel the loveliness and grandeur which in vain courted their notice. But every husbandman is living in sight of the works of a diviner artist; and how much would his existence be elevated, could he see the glory which shines forth in their forms, hues, proportions and moral expression! I have spoken only of the beauty of nature, but how much of this mysterious charm is found in the elegant arts and especially in literature? The best books have most beauty. The greatest truths are wronged if not linked with beauty, and they win their way most surely and deeply into the soul when arrayed in this their natural and fit attire. Now no man receives the true culture of a man, in whom the sensibility to the beautiful is not cherished; and I know of no condition in life from which it should be excluded. Of all luxuries this is the cheapest and most at hand; and it seems to me to be most important to those conditions, where coarse labor tends to give a grossness to the mind. From the diffusion of the sense of beauty in ancient Greece, and of the taste for music in modern Germany, we learn that the people at large, may partake of refined gratifications which have hitherto been thought to be necessarily restricted to a few.

What Beauty is, is a question which the most penetrating minds have not satisfactorily answered; nor, were I able, is this the place for discussing it. But one thing I would say; the beauty of the outward creation is intimately related to the lovely, grand, interesting attributes of the soul. It is the emblem or expression of these. Matter becomes beautiful to us, when it seems to lose its material aspect, its inertness, finiteness and grossness, and by the ethereal lightness of its forms and motions, seems to approach spirit; when it images to us pure and gentle affections; when it spreads out into a vastness which is a shadow of the Infinite; or when in more awful shapes and movements it speaks of the Omnipotent. Thus outward beauty is akin to something deeper and unseen, is the reflection of spiritual attributes; and of consequence the way to see and feel it more and more keenly, is to cultivate those moral, religious, intellectual and social principles of which I have already spoken, and which are the glory of the spiritual nature; and I name this that you may see, what I am anxious to show, the harmony which subsists among all branches of human culture, or how each forwards and is aided by all.

There is another power, which each man should cultivate according to his ability, but which is very much neglected in the mass of the people, and that is the power of Utterance. A man was not made to shut up his mind in itself; but to give it voice and to exchange it for other minds. Speech is one of our grand distinctions from the brute. Our power over others lies not so much in the amount of thought within us, as in the power of bringing it out. A man of more than ordinary intellectual vigor, may for want of expression, be a cypher, without significance, in society. And not only does a man influence others, but he greatly aids his own intellect, by giving distinct and forcible utterance to his thoughts. We understand ourselves better, our conceptions grow clearer, by the very effort to make them clear to another. Our social rank too depends a good deal on our power of utterance. The principal distinction between what are called gentlemen and the vulgar lies in this, that the latter are awkward in manners, and are especially wanting in propriety, clearness, grace, and force of utterance. A man who cannot open his lips without breaking a rule of grammar, without showing in his dialect or brogue or uncouth tones his want of cultivation, or without darkening his meaning by a confused, unskilful mode of communication, cannot take the place to which perhaps his native good sense entitles him. To have intercourse with respectable people, we must speak their language. On this account, I am glad that grammar and a correct pronunciation are taught in the common schools of this city. These are not trifles; nor are they superfluous to any class of people. They give a man access to social advantages, on which his improvement very much depends. The power of utterance should be included by all in their plans of self-culture.

I have now given a few views of the culture, the improvement, which every man should propose to himself. I have all along gone on the principle, that a man has within him capacities of growth, which deserve, and will reward, intense, unrelaxing toil. I do not look on a human being as a machine, made to be kept in action by a foreign force, to accomplish an unvarying succession of motions, to do a fixed amount of work, and then to fall to pieces at death, but as a being of free spiritual powers; and I place little value on any culture, but that which aims to bring out these, and to give them perpetual impulse and expansion. I am aware, that this view is far from being universal. The common notion has been, that the mass of the people need no other culture than is necessary to fit them for their various trades; and though this error is passing away, it is far from being exploded. But the ground of a man's culture lies in his nature, not in his calling. His powers are to be unfolded on account of their inherent dignity, not their outward direction. He is to be educated, because he is a man, not because he is to make shoes, nails, or pins. A trade is plainly not the great end of his being, for his mind cannot be shut up in it; his force of thought cannot be exhausted on it. He has faculties to which it gives no action, and deep wants it cannot answer. Poems, and systems of theology and philosophy, which have made some noise in the world, have been wrought at the work-bench and amidst the toils of the field. How often, when the arms are mechanically plying a trade, does the mind, lost in reverie or day dreams, escape to the ends of the earth! How often does the pious heart of woman mingle the greatest of all thoughts, that of God, with household drudgery! Undoubtedly a man is to perfect himself in his trade, for by it he is to earn his bread and to serve the community. But bread or subsistence is not his highest good; for if it were, his lot would be harder than that of the inferior animals, for whom nature spreads a table and weaves a wardrobe, without a care of their own. Nor was he made chiefly to minister to the wants of the community. A rational moral being cannot, without infinite wrong, be converted into a mere instrument of others' gratification. He is necessarily an end, not a means. A mind, in which are sown the seeds of wisdom, disinterestedness, firmness of purpose and piety, is worth more than all the outward material interests of a world. It exists for itself, for its own perfection, and must not be enslaved to its own or others' animal wants. You tell me, that a liberal culture is needed for men who are to fill high stations, but not for such as are doomed to vulgar labor. I answer, that man is a greater name than president or king. Truth and goodness are equally precious, in whatever sphere they are found. Besides, men of all conditions sustain equally the relations, which give birth to the highest virtues and demand the highest powers. The laborer is not a mere laborer. He has close, tender, responsible connections with God and his fellow-creatures. He is a son, husband, father, friend and christian. He belongs to a home, a country, a church, a race; and is such a man to be cultivated only for a trade? Was he not sent into the world for a great work? To educate a child perfectly, requires profounder thought, greater wisdom than to govern a state; and for this plain reason, that the interests and wants of the latter are more superficial, coarser and more obvious, than the spiritual capacities, the growth of thought and feeling, and the subtle laws of the mind, which must all be studied and comprehended, before the work of education can be thoroughly performed; and yet to all conditions this greatest work on earth is equally committed by God. What plainer proof do we need that a higher culture, than has yet been dreamt of, is needed by our whole race.

II. I now proceed to inquire into the means by which the self-culture just described, may be promoted; and here I know not where to begin. The subject is so extensive, as well as important, that I feel myself unable to do any justice to it, especially in the limits to which I am confined. I beg you to consider me as presenting but hints, and such as have offered themselves with very little research to my own mind.

And, first, the great means of self-culture, that which includes all the rest, is to fasten on this culture as our great end, to determine deliberately and solemnly, that we will make the most and the best of the powers which God has given us. Without this resolute purpose, the best means are worth little, and with it the poorest become mighty. You may see thousands, with every opportunity of improvement which wealth can gather, with teachers, libraries and apparatus, bringing nothing to pass, and others, with few helps, doing wonders; and simply because the latter are in earnest, and the former not. A man in earnest finds means, or, if he cannot find, creates them. A vigorous purpose makes much out of little, breathes power into weak instruments, disarms difficulties, and even turns them into assistances. Every condition has means of progress, if we have spirit enough to use them. Some volumes have recently been published, giving examples or histories of "knowledge acquired under difficulties;" and it is most animating to see in these, what a resolute man can do for himself.—A great idea, like this of self culture, if seized on clearly and vigorously, burns like a living coal in the soul. He who deliberately adopts a great end, has, by this act, half accomplished it, has scaled the chief barrier to success.

One thing is essential to the strong purpose of self-culture now insisted on, namely, faith in the practicableness of this culture. A great object, to awaken resolute choice, must be seen to be within our reach.—The truth, that progress is the very end of our being, must not be received as a tradition, but comprehended and felt as a reality. Our minds are apt to pine and starve, by being imprisoned within what we have already attained. A true faith, looking up to something better, catching glimpses of a distant perfection, prophesying to ourselves improvements proportioned to our conscientious labors, gives energy of purpose, gives wings to the soul; and this faith will continually grow, by acquainting ourselves with our own nature, and with the promises of divine help and immortal life which abound in revelation.

Some are discouraged from proposing to themselves improvement, by the false notion, that the study of books, which their situation denies them, is the all important, and only sufficient means. Let such consider, that the grand volumes, of which all our books are transcripts, I mean, nature, revelation, the human soul, and human life, are freely unfolded to every eye. The great sources of wisdom are experience and observation; and these are denied to none. To open and fix our eyes upon what passes without and within us, is the most fruitful study. Books are chiefly useful, as they help us to interpret what we see and experience. When they absorb men, as they sometimes do, and turn them from observation of nature and life, they generate a learned folly, for which the plain sense of the laborer could not be exchanged but at great loss. It deserves attention that the greatest men have been formed without the studies, which at present are thought by many most needful to improvement. Homer, Plato, Demosthenes, never heard the name of chemistry, and knew less of the solar system, than a boy in our common schools. Not that these sciences are unimportant; but the lesson is, that human improvement never wants the means, where the purpose of it is deep and earnest in the soul.

The purpose of self-culture: this is the life and strength of all the methods we use for our own elevation. I reiterate this principle on account of its great importance; and I would add a remark to prevent its misapprehension. When I speak of the purpose of self-culture, I mean, that it should be sincere. In other words, we must make self-culture really and truly our end, or choose it for its own sake, and not merely as a means or instrument of something else. And here I touch a common and very pernicious error. Not a few persons desire to improve themselves only to get property and to rise in the world; but such do not properly choose improvement, but something outward and foreign to themselves; and so low an impulse can produce only a stinted, partial, uncertain growth. A man, as I have said, is to cultivate himself, because he is a man. He is to start with the conviction, that there is something greater within him than in the whole material creation, than in all the worlds which press on the eye and ear; and that inward improvements have a worth and dignity in themselves, quite distinct from the power they give over outward things. Undoubtedly a man is to labor to better his condition, but first to better himself. If he knows no higher use of his mind than to invent and drudge for his body, his case is desperate as far as culture is concerned.

In these remarks, I do not mean to recommend to the laborer indifference to his outward lot. I hold it important, that every man in every class should possess the means of comfort, of health, of neatness in food and apparel, and of occasional retirement and leisure.—These are good in themselves, to be sought for their own sakes, and still more, they are important means of the self-culture for which I am pleading. A clean, comfortable dwelling, with wholesome meals, is no small aid to intellectual and moral progress. A man living in a damp cellar or a garret open to rain and snow, breathing the foul air of a filthy room, and striving without success to appease hunger on scanty and unsavory food, is in danger of abandoning himself to a desperate, selfish recklessness. Improve, then, your lot. Multiply comforts, and still more, get wealth if you can by honorable means, and if it do not cost too much. A true cultivation of the mind is fitted to forward you in your worldly concerns, and you ought to use it for this end. Only, beware, lest this end master you; lest your motives sink as your condition improves; lest you fall victims to the miserable passion of vying with those around you in show, luxury and expense. Cherish a true respect for yourselves. Feel that your nature is worth more than every thing which is foreign to you. He who has not caught a glimpse of his own rational and spiritual being, of something within himself superior to the world and allied to the divinity, wants the true spring of that purpose of self-culture, on which I have insisted as the first of all the means of improvement.

(To be continued.)

☞ **Price of advertising, $1 for three insertions of ten lines or less.**

HORTICULTURAL EXHIBITION.—The Horticultural Association of the valley of the Hudson, will hold its second semi-annual meeting in the city of Albany, at the City-Hall, on the 25th day of June inst. Specimens of early fruits, vegetables, flowers and farm and garden productions of every description, will be received by the committee on the spot the day previous, or before 9 o'clock A. M. on the day of exhibition.

This association, composed of practical men, amateurs and gentlemen resident in all the various counties bordering the Hudson, was established in 1838, and aims at the promotion of horticultural improvement, and the taste for rural affairs generally throughout this portion of the country. At the semi-annual meeting, it is desirable that specimens of the fruits and plants of all the various districts and soils of the Hudson valley should be brought together for comparative exhibition; and the association indulges the hope that all persons friendly to the objects in view, will contribute something for this purpose.

The annual election of officers of the association will also be held at Albany, on the 25th of June. The autumnal exhibition of the association will take place in New-York, about the middle of September next.

jlt A. J. DOWNING, *Cor Sec'y*, Newburgh.

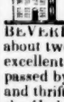
THOROUGH-BRED IMPROVED SHORT-HORN CATTLE.—The subscriber has recently taken charge of the superior stock of Short-Horn Cattle, bred by L. F. Allen, Esq. on his farm at Grand-Island, in the Niagara river. The original stock from which these have been produced, were selected from among the best animals in the country, and several of them were imported direct from England. As a milking stock, the cows of this herd will challenge competition with those of any other in the United States, several of them being extraordinary milkers, and all of them good. For the making of butter, they have been thoroughly tested, and their dairy excellence is remarkable. Their value in this particular, is fully sustained in the grade animals descended from the bulls of this herd, which have, thus far, without exception, proved the best of milkers. This excellence, possessed in reality by no cow so much as in the pure Short-Horn, has been too much neglected by both English and American breeders, and their value as a dairy stock thus underrated.

In addition to the above, are a select herd of DEVON SHORT-HORNS, bred from two choice pure Devon cows, directly descended from the celebrated herd of Mr. Coke, of Holkham, Eng. These beautiful animals are a cross of different degrees with the pure "Improved Short-Horns," without any admixture of common blood; and are as perfect combinations of excellence in color, hardihood, symmetry and size as can be found.

As the present herd, of all ages, has now attained the number desirable to be kept on the farm, (upwards of forty,) a part of them are offered for sale. Application may be made either personally or by letter, (post-paid,) to SAMUEL ALLEN, Esq. at Black-Rock, N. Y. or to the subscriber on the farm, five miles below, at which a ferry connects with the main shore, on the Erie canal. LEWIS G. COLLINS.

Grand-Island, May 15, 1839.

P. S. A few fine grade animals also for sale. jtf.



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ARTICLES.		New-York. May 20.	Boston. May 20.	Philadelphia May 20.	Baltimore. May 20.
Beans, white,	per bush.	2 00 .. 2 25	2 00 .. 3 00	1 50 .. 1 75	1 75
Beef,	cwt.	8 00 .. 8 25	9 25 .. 9 50	9 00 .. 9 50	10 00 .. 11 50
Bacon, western,	lb.	10 .. 12	12 .. 14	10 .. 11	11 .. 12
Butter, fresh,	lb.	16 .. 20	16 .. 20	14 .. 16	25 .. 50
Cheese,	lb.	9 .. 11	10 .. 12	10 .. 11	8 .. 9
Cotton, best,	lb.	14 .. 18	14 .. 20	14 .. 19	15 .. 17
Flour, best,	bbl.	7 12 .. 8 25	7 50 .. 8 62	6 37 .. 7 00	6 00 .. 7 50
Grain—Wheat,	bush.	1 62 .. 1 65	1 50 .. 1 62	1 50 .. 1 60	1 55 .. 1 60
Rye,	bush.	98 .. 1 00	98 .. 1 00	90 .. 94	95 .. 1 00
Oats,	bush.	46 .. 1 25	58 .. 60	51 .. 57	47 .. 49
Corn,	bush.	1 20 .. 1 25	1 15 .. 1 25	1 06 .. 1 07	95 .. 1 00
Hams, pork,	lb.	11 .. 12	13 .. 15	12 .. 13	12 .. 13
Pork, in bag,	cwt.	....	10 00 .. 11 00	7 25 .. 8 00	9 00 .. 9 50
Seeds—Red Clover,	bush.	12 00 .. 13 00	12 00 .. 14 00	13 00 .. 13 50	12 50 .. 13 00
Timothy,	bush.	2 60 .. 2 75	2 50 .. 2 75	2 25 .. 3 00	2 25 .. 3 00
Wool—Saxony, deece,	lb.	55 .. 65	57 .. 62	53 .. 61	50 .. 54
Merino,	lb.	45 .. 55	52 .. 55	52 .. 53	45 .. 54
1-4 and com.	lb.	40 .. 43	37 .. 40	36 .. 40	35 .. 44
Sheep,	head,	4 25 .. 5 50	5 00 .. 6 50	1 00 .. 2 87	....
Cows and Calves,		33 00 .. 55 00	30 00 .. 62 00	18 00 .. 40 00	42 00 .. 46 00

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